REPORT

OF THE

MADRAS SURVEY AND LAND RECORDS COMMITTEE

VOLUME I

MADRAS:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1915.

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Subject:

Submitting Report of the Madras Survey and Land Records Committee.

ENCLOSURES.
No. __________
Spare copies ______

No.

MADRAS, *Dated 15th April* 1915.

From

G. A. D. STUART, ESQ., I.C.S.,
Secretary, Madras Survey and Land Records Committee,

To

THE SECRETARY TO GOVERNMENT,
REVENUE DEPARTMENT, MADRAS.

Sir,

With reference to G.O. 3193, Revenue, dated 7th November 1914, I have the honour to submit the report of the Madras Survey and Land Records Committee.

2. The Committee dissolved on the afternoon of 14th April 1915.

I have the honour to be,
Sir,
Your most obedient servant,

G. A. D. STUART,
Secretary, Survey Committee.

REPORT

OF THE

MADRAS SURVEY AND LAND RECORDS COMMITTEE.

PART I.—INTRODUCTORY.

The Survey Committee constituted under G.O. 3193, Revenue, dated 7th November 1914, met on the 1st December 1914. A report has been called for on the following six questions :—

(1) whether the work of Revision and Re-survey to be hereafter carried out by the Survey Department is necessary and, if so, in what manner it can be curtailed and cheapened,

(2) to what extent the maintenance of land records and maps by the Revenue Staff can be simplified and rendered more efficient,

(3) the steps necessary to render the land revenue registry a more accurate and useful representation of actual facts,

(4) the feasibility of improving the present system of granting pattas,

(5) whether the retention of the Land Records Establishment is desirable or whether the work now done by it could be done by the Land Revenue Establishment with some addition to its strength,

(6) the organization and mutual relations of the Land Revenue and the Land Records Staff, if the latter is retained.

Question (1) is dealt with in Part II of the report, question (2) in Part III, questions (3) and (4) in Part IV and questions (5) and (6) in Part V. A summary of recommendations will be found in Part VI.

2. Up to early in March, we were occupied in collecting evidence. An itinerary of our tours will be found in Appendix I-A at the end of this volume. Before reporting in detail on each of the questions referred to us, we think it desirable to give some account of our proceedings, with especial reference to our methods of collecting evidence and the use which we have made of it. The evidence itself forms Volume II of this report.

3. Our witnesses may be roughly divided into four groups :—(1) officials (pages 1—62 and 163—174), (2) non-official members of the Legislative Council (pages 145—162), (3) cultivators and groups of cultivators (pages 175—184), (4) officers of other Provinces (pages 276—300). The rest of Volume II consists of written statements communicated to us by local officers. Two points have to be explained, in order to render the record of evidence intelligible. In the first place, a great deal of it is recorded in the form of answers to a series of questions. These questions and an illustrative diagram form appendices I-C and I-D to the report and will be found at the end of this volume. In the second place, the official group of witnesses, whose evidence is recorded in the first sixty-two pages of the second volume, are referred to by numbers, not names. The corresponding names are entered, as Appendix I-B, at the end of this volume.

4. We will first deal with the portion of our evidence which comes from outside this Presidency. The two main branches of our enquiry are Survey and Registration of Titles. In regard to both, the practice of this Presidency differs more or less widely from that of other parts of India—a circumstance which is largely responsible for the order which has called this Committee into existence. We felt that our enquiry would be incomplete, unless it included an inspection of work in other Provinces and an attempt to profit by their experience. With the previous permission of Government, we visited Calcutta, Bombay, Lahore, Allahabad, Poona and Gya (Bihar and Orissa) and secured such information as was obtainable in the time at our command by discussion and by inspection

of offices and field work. We were received by responsible and representative officers (The Honourable Mr. Curtis and Mr. Seddon in Bombay and Poona; Mr. Gibson in Lahore; Mr. Raw in Allahabad ; Mr. Reid in Gya ; Mr. Nixon in Calcutta) and we must warmly acknowledge the great kindness and consideration shown us by these officers. The results of our enquires are embodied in statements to be found in pages 276—300 of Volume II. We believe that these sketches of procedure in four Provinces may be found to possess a value of their own, independently of the rest of the report or of the particular circumstances which have called it into existence. Confining ourselves, however, to the immediate subject-matter of the report, we can hardly over-estimate the advantages which we derived from the study of the various systems of Records of Rights, which form so important and highly developed a feature of the administration of all the Provinces visited. Our conclusions and proposals under this head are set forth in Part IV of this report. In regard to Survey, the position is different, our own system being the more elaborate. What we had to consider was whether less elaborate systems, such as are prevalent in other Provinces, could not be made to serve our purpose. Our finding is in the negative. The administrative requirements of this Presidency and the best means of satisfying them are discussed in Part II of the report. Here, we would only say that the degree of accuracy to which we are committed is not necessitated by the administrative conditions of other Provinces; nor is it supplied. Different administrative requirements will naturally result in different systems. This is our *general* conclusion; in points of detail, we have received much assistance.

5. Coming to the enquiries connected with this Presidency, our object was to estimate administrative requirements and to consider the most economical methods by which they could be adequately supplied. So far as the administrative aspect of the matter is concerned, we have to a large extent to be guided by the requirements of the people themselves; from this point of view, we would lay stress on the statements taken from ryots in six Districts of this Presidency (pages 175—184 of Volume II). These statements are first-hand evidence of the actual wishes of the population affected: so far as Survey is concerned, they mainly consist of a demand for an authoritative record of measurements in the hands of the Village Officer; the witnesses showed great readiness to appreciate the advantages of a Record of Rights and are quite willing to accept compulsory registry as its basis. The evidence of officials and of non-official members of the Legislative Council as to the requirements of cultivators was to much the same effect as that of the cultivators themselves. The Honourable Members of Council would welcome the curtailment of professional survey operations, on the score of economy. We believe that adequate arrangements for maintenance, on the basis of an accurate Survey, will largely obviate the necessity for further professional work: but, in about one-third of the Presidency, the condition precedent of maintenance, namely, a maintainable Survey does not exist. How these areas can and should be dealt with is discussed in Part II of our report.

6. We would add some explanatory notes in regard to the evidence recorded on pages 1—62 of Volume II of this report. This evidence (and, we may add, all our evidence) was taken, for the most part, from groups of witnesses in a somewhat informal manner and frequently took the form of discussion ; the purport was recorded by the members of the Committee, whose records were subsequently compared. Much of the evidence was recorded in the course of the Committee's tours, which included the examination of offices or field work or both in nine of the twenty-two Districts of this Presidency. Our local witnesses include Survey and Settlement Officers, members of the Land Records Staff and District Officials. The questions of the Committee, around which the answers are grouped, were framed before the commencement of the investigation and on the responsibility of two members of the Committee. Many of them would have undergone radical changes in form, if framed after we had had more experience. They served, however, to keep the enquiry within bounds; moreover, the groups of questions roughly correpond with the main divisions of the report. For example, the different kinds of Survey are discussed under questions 3, 4, 5 and 6, of Section I (pages 9 to 15 of Volume II; *vide* also pages 1 and 2); demarcation, under questions 7, 8, 9, 10, 11 and 17 of Section I (pages 16—24 and 33-34); survey records, under questions

2 and 12 of Section I (pages 3—8 and 25) ; the Survey Department under questions 13, 14, 15 and 16 of Section I (pages 26—32) ; the possibility of maintenance of survey marks and maps, under question 2 of Section II (pages 36—37) ; the best Establishment for the purpose, under questions 1 and 3 of Section II and questions 1 and 5 of Section V (pages 35, 38, 58—62); a Record of Rights, under questions 1, 2, 3, 9, 10 of Section III and questions 1 and 2 of Section IV (pages 41—46, 54—57); the procedure in connection with the registration of assurances, under questions 5 and 7 of Section III (pages 49, 50 and 52) ; the procedure in connection with Civil Courts, under questions 6 and 8 of Section III (pages 51 and 53). Further written evidence under each of these heads is to be found throughout Volume II; but, without any disparagement whatever to the officers who have been good enough to send us written answers, we would, on the whole, lay greater stress on the evidence given orally, because we were in a position to obtain that evidence on a basis of mutual explanation and discussion, for which our questions provided an inadequate substitute.

7. We have not encumbered our report by detailed references to the evidence ; we may say generally that we are not conscious of having made a single recommendation which runs counter to the views of the majority of our witnesses ; on the other hand, many of their suggestions and criticisms are embodied in the report itself.

PART II.—SURVEY.

Q. 1.—Whether the work of Revision and Re-survey to be hereafter carried out by the Survey Department is necessary and, if so, in what manner it can be curtailed and cheapened.

8. *Introductory*.—The future work of the Survey Department falls under three heads :—

(*a*) Estate Surveys.
(*b*) Surveys of Municipalities and other urban areas.
(*c*) Survey of ryotwari and minor inam lands.

9. *Estate Surveys* (*a*).—The figures given on page 31 of our Order of Appointment show that there are 25,000 square miles of unsurveyed land in Permanently Settled Estates ; there is already some demand for the Survey of such areas. This demand will presumably increase in volume, as the advantages of an accurate map to the landholder and his tenants become more apparent. It seems unsafe to assume that any part of this area will not ultimately require Survey, but it is impossible to lay down with any precision what demand will arise within any given time. The matter lies in the hands of the landholders themselves for the most part ; it is also open to the Court of Wards, when an estate comes under their charge, to institute a Survey in the interests of the youthful proprietor. Taking past experience as our guide and allowing for all possible diminution in elaboration, we think that a party of the Survey Department might perhaps survey 400 square miles in a year ; 350 would be a safer figure. Taking 400 square miles as a basis for calculation, there would be sixty years' work for one party ; the doubtful question is how much of this area will require Survey within any given period.

10. *Urban Surveys* (*b*).—Unsurveyed Municipalities represent an area of 134 square miles (page 15 of our Order of Appointment). We have no exact figures as regards Unions and other rising towns, but we do not think that we shall err on the side of excess if we take the same figure on their account. The system of Survey by houses was originally in force ; twenty square miles of operations of this kind would give a Survey Party work for one year. In other words, there is enough material for 13½ years' work for one party. A simplified system of Street Surveys has been recently introduced, which would probably double the outturn, but our information is that this system, though it has the advantage of relative speed and economy, will not be found sufficient for the needs of the Municipal and Local bodies concerned, it being necessary for the purpose of town-planning and other sanitary schemes and for the provision of open spaces and streets in crowded tracts that there should be detailed information as to the private interests involved,

the relative position of houses and backyards and so forth. Having regard to the impetus given to sanitary and aesthetic questions in urban areas by Professor Geddes' recent visit to Madras, we cannot safely ignore the probability of map-making on an elaborate scale in the near future. We would therefore take 13½ years' work as a fair estimate under this head.

11. *Ryotwari Surveys* (*c*).—The figures under this head given on page 15 of our Order of Appointment are compiled from a programme drawn up three years ago and provide for the Re-survey and Revision Survey of a little more than 10,000 square miles. A statement based on the latest orders will be found in Appendix II-D of our report; in that statement, we summarize the facts and refer to the orders in regard to each District. The total works out at about 26,000 square miles. It is, we think, unnecessary for us to recapitulate the facts and arguments, which have led to the decision in regard to each area; these are set forth in the Government Orders themselves. Broadly speaking, the basis of these decisions is that accurate maps do not exist for the areas in question and that therefore maintenance and general administration suffer. We think that South Canara will ultimately have to be re-surveyed; on the other hand, it is possible that no further professional Survey will be required in the "triangle" Taluks of Tanjore; adding 3,400 square miles on this account to the estimate given in the Appendix and allowing 350 square miles for a year's work, this means eighty-three years' work for one Survey Party. The date for these operations is practically fixed. Surveys have to be completed within the periods when Re-settlements fall due in the various Districts concerned, a Re-survey being a natural preliminary to a Re-settlement. On the other hand, unless an area is found absolutely unworkable, it seems clearly best that its Re-survey should be postponed until Re-settlement is due. The last Settlement concerned falls in 1933–34, that is to say, in nineteen years. To complete the work within this period would give full work to more than four parties, apart from Urban or Zamindari Survey. This will be further discussed, when dealing with the future of the Survey Department, but we have first to consider whether the various items of work dealt with above must be carried out by a professional agency.

12. *Need for Professional Agency.*—As regards urban areas, the matter does not seem to require discussion. Operations in zamindari areas are in the nature of *de novo* Surveys: the estates have to be traversed in detail, and there is no local agency by which the cadastral work could conceivably be carried out. A professional agency will therefore be necessary in their case also. As regards ryotwari tracts, at least half the areas involved were surveyed on the Block Map System and have no closed traverses and must therefore be dealt with by a professional agency, if only on this account. The only debateable question seems to be whether the cadastral portion of the work could be done by Karnams, as in the Punjab and the United Provinces. In many of the listed areas, the previous Survey was actually done in part by Karnams, and it is partly on account of the bad quality of their work that it is found necessary to subject the tracts concerned to a Re-survey. Thus, the results of experience are by no means favourable. Karnams in the Madras Presidency are not the same stamp of subordinates as Patwaris in the Punjab. They are hereditary officers, a state of things which enables us to get their services at an extraordinarily cheap rate: they are overburdened with multifarious duties in the matter of account-keeping and supply of statistical information: we cannot say that it would be possible (though we think that it would be desirable) to reduce their work materially, except as the result of a fundamental change in our principles of assessment, which go into far greater detail and involve greater fluctuations and the necessity for more detailed inspection than in any other parts of India with which we are acquainted. The nature of the country (especially in certain tracts listed for Re-survey) presents greater difficulties than in the open plains of Northern India. In Bombay, where the natural conditions approximate more nearly to those obtaining in this Presidency, the Government have abandoned all attempts to train Village Accountants in Survey, even for the purpose of keeping survey marks and maps up to date. We therefore think it impracticable to entrust the cadastral portion of the Survey to Karnams. We have trained them to the point at which they can maintain a simple Survey. This is more than has been achieved in Bombay and is the most that we can hope

to achieve here. These considerations seem to us to prove conclusively the necessity for a professional Survey Department, even in the case of cadastral work. That the continuance of a Survey Department is essential in other connections has been shown above. In Bombay, where a professional department was dispensed with in 1905, difficulties have arisen in regard to Town Surveys; the Survey of Bombay City is being carried out by the Survey of India; in other towns the remnants of the old Provincial Department are being utilized. As regards cadastral work in Bombay, the Director of Land Records is employing Surveyors under the supervision of officers of the Settlement Department. No economy would be secured by such an arrangement in this Presidency, and it would probably lead to a decrease in efficiency. The continuance of the existing Survey Department in Madras seems the simplest and best method of averting the difficulties experienced in Bombay. We may add that the Madras Survey Department does useful work for the Government of India (*vide* letter 182, dated 15th February 1915, from Col. Renny-Tailyour, Appendix II-B).

13. *Means of economizing.*—Having answered in the affirmative the question whether the existence of a professional Survey Department is necessary, we now come to the question how far its operations can be cheapened, either by curtailing their scope or by arrangements calculated to secure greater efficiency in the department itself: increased efficiency implies better work or quicker work, and either of these elements must make for economy. We have endeavoured to arrive at an estimate of the relative cost of Surveys in Madras and elsewhere, but we find that the differences in local conditions and methods of tabulation present an insuperable obstacle to such a comparison. On the evidence before us, we are not prepared to say that there is (or is not) a marked difference in economy between Madras and other Provinces.

The possibility of direct curtailment of survey expenses may be dealt with under three heads (A) method of Survey, (B) demarcation and (C) survey records.

A.—Method of Survey.

14. *Record of Measurements.*—The systems of Survey now in force are summarized on page 12 of our Order of Appointment: the history of the department is set forth at greater length in the introduction to the Survey Manual. A general description of Madras policy in survey matters is to be found in G.O. 1212, Revenue, dated 30th November 1903. On page 17 of that order, we find Mr. Carr stating that "the basis of maintenance is the field measurement book which should "exhibit for each and every field a correctly plotted map, showing the exterior "and interior measurements and the subdivisions found at the time of Survey and "Settlement." This represents the present practice in areas surveyed on all but the Block Map and Plane Table Systems. The so-called "Plane Table" System, as used in this Presidency, is merely a modification of the Block Map System and has nothing to do with what is technically known as Plane Table Survey. In future both systems will be referred to inclusively as the Block Map System. In areas surveyed under the Block Map System, the preparation of a field measurement book formed no part of the original survey operations, and the field measurement books (subsequently prepared) give no internal measurements, but Karnams are supplied with block maps, containing measurements; each surveyed point is fixed by offsetting from base lines (G lines) connected directly or indirectly with the theodolite frame-work. The measurements along the G lines and the offsetted distances from the G lines are recorded in the block maps. Thus, the measurements given in block maps serve the same purpose as the internal measurements given in the field measurement book in a tract surveyed under the Triangle or Diagonal and Offset Systems. Speaking generally, the essential difference between the systems in force in this Presidency and the systems in other parts of India is that the latter rely on the village map as the basis of maintenance, whilst Madras relies on a record of measurement. This record of measurement is in all cases supplied by a reproduction of a portion of the frame-work of the original Survey: in the Diagonal and Offset and Triangle Systems, it takes the form of an independently plottable map of each field. The system now in force in the Punjab approaches most nearly to that in Madras, but there the diagonals and offsets are

needed primarily for the purpose of calculating areas. It may be added that the Madras unit of measurement is 7·92 inches (a link of the Gunter's chain) and that all measurements are recorded to the last link. This constitutes, on the whole, a more elaborate system than that in force in any other part of India.

15. *Views of agriculturists.*—It would, we think, be a waste of time for us to consider the question whether the system now in force in this Presidency is one to be recommended in a tract of country where no Survey exists. Good or bad, it represents the practice of the Presidency for half a century; all ryotwari areas have been surveyed on these lines, and the general attitude of the population has been profoundly affected thereby. This is an aspect of the question which it is impossible to ignore. We have taken statements from ryots in several Districts of the Presidency (pages 175 to 184 of Volume II), which show clearly that they have come to regard such measurements as necessary for their own purposes. This conclusion is emphasized by the evidence of every District Officer or other official witness whom we have consulted. Mr. Chadwick points out that the main purpose served by the present method of Survey is no longer the direct enhancement of revenue, whatever it may have been in the past, but rather the general advantage of the cultivator and the satisfaction of his requirements. The ryot, who pays us revenue, demands, in return, a record of his holdings sufficiently minute to serve as an authoritative safeguard against encroachments by his neighbour. The high commercial value of land in many parts of the Presidency, the sentimental value attached to land by the ryot and the fact that an accurate and somewhat minute standard of measurement has been at the ryot's disposal for so many years have made him tenacious of even the smallest piece of land. On the other hand, the acquisitiveness of many ryots leads to incessant attempts at encroachment: even where encroachments are not made, there is a vivid fear of their being made, and it is to the survey measurements that the ryot looks for the protection of his own interests against those of his grasping neighbour. If he cannot get satisfaction from Government, he must have recourse to Civil Courts, where suits are too frequently bolstered up by vaguely-worded documents or by oral evidence of great trenchency but of doubtful truth. Numerous witnesses are clear on the fact that, taking the temper of the people as it exists, an accurate record of measurement is a safeguard against litigation and oppression.

16. *Communal lands.*—Government holds, in regard to porambokes (communal and public lands), somewhat the same position as that which a ryot holds in regard to his private lands: but the position of Government is in some respects a good deal less secure. The watchfulness of even the most zealous and single-hearted local official would not be a complete substitute for the sense of property which animates the individual landholder; moreover, zeal and single-hearted devotion to the interests of Government are qualities which cannot be universally predicated. In other parts of India, we find that what would be called porambokes in this Presidency are either tracts of land in the possession of and minutely guarded by special departments of Government or, if they are in the nature of village communal lands, are practically left to the villagers themselves to look after or not, as they choose. If they complain, the matter is enquired into, but not, as a rule, otherwise. In this Presidency, such an attitude would constitute a sort of revolution in ideas. Ryots as a whole have expressed themselves to us as decidedly in favour of the protection of their numerous porambokes (grazing grounds, burial-grounds, cart-tracks, paths, channels of all kinds, tanks, threshing-floors and so forth), but they have neither machinery nor force of character sufficient to enable them to protect these lands for themselves, nor has the duty of protection ever been imposed on them. There can be no doubt whatever (1) that, in the interests of the community as a whole and especially of its poorer members, careful and somewhat minute defence of poramboke lands is an administrative necessity, (2) that to hand the task over to the villagers would be out of the question, considered as a means of fulfilling this obligation. On this point, the evidence of witnesses of every kind is unanimous and conclusive. Porambokes constitute a substantial proportion of the area of land in ryotwari tracts: excluding forests, they may be put at about seventeen per cent. of the whole ryotwari area. In these circumstances, an accurate map showing each holding and showing each poramboke field, with measurements, seems to constitute an irreducible minimum for the

administrative needs of this Presidency. This is, in the opinion of the Committee, the fundamental principle at the root of the survey policy of this Presidency. The use of the field measurement book is a matter of convenience and will be discussed later on.

17. *Advantages of the Diagonal and Offset System.*—Theoretically, we are not prepared to pronounce against any system of Survey which leads to accurate results, but, in practice, the Block Map System has proved decidedly inaccurate, a fact which leads to practical difficulties in maintenance. Apart from this consideration, it will be observed, from the description given above, that, under the Block Map System, field-points are referable to external base lines, which will sometimes stretch to a length of half a mile or more This is a troublesome method of checking measurements and one which, even under the most favourable conditions, places too severe a demand on the ability and industry of an ordinary Karnam. When the country is undulating and broken up by clumps of trees, the task of referring back to G. lines becomes one of the greatest difficulty and will inevitably be shirked by the Karnam and other revenue subordinates. This is a matter of great administrative importance. The Karnam's work is the basis of maintenance, and a satisfactory state of maintenance is the only alternative to the expense of periodical Re-surveys. We cannot therefore recommend that any area which calls for a Re-survey, through inaccuracy in the existing records, should be re-surveyed on the Block Map System in any form. The system seems radically unsuitable, as a basis for keeping a record of measurements up to date. The "triangle" areas have been exceedingly well surveyed in this Presidency, the success being attributed largely to the amount and nature of the supervision. This is emphasized in Mr. Marjoribanks' evidence. There were at that period two or even three Gazetted Officers for each Survey Party. There is, however, a general objection to the system, in that it involves more measurements than the Diagonal and Offset System and also involves, theoretically, the maintenance of stones at every bend of a field, a feature of demarcation which we should wish to avoid: further discussion on this point will follow in its proper place. Another general objection is that fields surveyed on this system frequently include a number of ill-conditioned triangles which result in plotting errors; these tend to become cumulative errors, in the case of long irregularly shaped fields. An illustration of these difficulties and a map of a village of the kind will be found in G.O. 1700, Revenue, dated 7th June 1913. We have considered a system known as the "Punganur System" brought to our notice by Mr. Hatchell, the present Director of Survey. The objections to it are that the field boundary measurements are not recorded and that the offsets tend to be too long; this introduces fresh possibilities of error and also renders maintenance more difficult. The Diagonal and Offset System is free from the specific defects noted against the systems discussed above. It is preferred by practically all our witnesses. We recommend its use in all future Re-surveys for ryotwari areas.

B.—Demarcation.

18. *Subdivisions, etc.*—At present, all bends in survey fields, as well as field trijunctions, are demarcated with granite stones. Subdivisions, under recent orders, are no longer demarcated, and the stones already planted are not being maintained. We are in agreement with the orders as to subdivisions, with the important exception that poramboke subdivisions should not, in our opinion, be left undemarcated, simply because they *are* subdivisions: further, the bends on porambokes should not be left undemarcated, simply because they are not field trijunctions or the ends of G. lines. We have noted above on the great importance and difficulty of preserving public and communal lands from encroachment. We may add that, throughout the whole of India, public lands are usually demarcated. Many of our witnesses have recommended the demarcation of porambokes, partly on the ground that the absence of stones leads ryots to encroach unintentionally and thereby subject themselves to trouble and expense and also on the ground that such demarcation would be a check on the Village Officers' powers of oppression in regard to poor or uninfluential ryots. This latter argument finds especial favour with non-official witnesses, including members of the Legislative Council.

19. *Demarcation of Survey Field Trijunctions and Theodolite Stations.*—Leaving porambokes aside, we think that a considerable saving of expense in Survey and trouble in maintenance would be secured by limiting demarcation to theodolite stones and trijunctions of survey fields. This proposal would about halve the number of maintainable stones in the Presidency. Figures are given in Appendix II-C. The bulk of our official witnesses support the suggestion. The majority of the ryots examined would doubtless prefer the demarcation of bends of survey fields and also bends of subdivisions (which constitute holdings), but their preference is not sufficient in all cases to induce them to face the expense: moreover, when questioned further, they have usually admitted that what they really require is an authoritative record of measurements, by means of which their boundaries can be shown them by the Karnam. This is the exact effect of our proposal, namely, to demarcate field trijunctions, whilst leaving other points undemarcated. We therefore regard this amount of demarcation as sufficient for administrative purposes : we must add that we also regard it as necessary. We need not repeat here the arguments already advanced to show that Government seems to be committed to the task of giving ryots an authoritative statement of their boundaries : but we would add that, taking the Karnam's capacity into account in the matter of maintenance, we think that he cannot perform his task satisfactorily, if he has to go back to theodolite stones, in order to clear up disputes. If field trijunctions are demarcated, all points within any field can be arrived at within a margin of a few links: when stones are missing or have been moved (contingencies which must occur from time to time), all that he will have to do is to replace them, by the help of other stones lying a field or, at most, two fields away. These tasks are within his capacity, and it is by restricting his duties to the extent of his capacity, that we hope to put maintenance on a satisfactory footing and thereby to save the expense of Re-surveys of any kind, in areas where maintenance is started on a basis of accurate survey records. Another argument in favour of the demarcation of trijunctions is that they give inspecting officers a ready means of identifying field boundaries, especially in wet tracts, where many boundaries, which are merely made for the purpose of cultivation and irrigation, show no difference to the eye, by comparison with the boundaries of real holdings. Further, it is part of the Karnam's duty to plot subdivisions, subject to the control of the Revenue Inspector ; the existence of stones at field trijunctions enables him to perform this operation without undue difficulty.

20. *Legal difficulties.*—The recommendation made in the previous paragraph involves a reference to the Survey Act (Madras Act IV of 1847), for, though the rules framed under Section 32 of the act refer to a map as a record of survey operations, the act itself seems to contemplate the laying down of boundaries by means of survey marks as the only legal result of survey operations (*vide* Sections 11 and 14, for example) and also makes it incumbent on the Survey Officer to follow the boundary of the field. It is therefore questionable whether our recommendation that demarcation should be limited to trijunctions may not necessitate an alteration in the provisions of the Survey Act. It might be sufficient to prescribe a peg or a turf-mark as a survey mark, for the purposes of the act, in cases in which it was not proposed to demarcate by stones. Presumably, a rule that such marks need not be maintained would be legal, with reference to Section 14 ; such a rule would certainly be necessary. Suitable amendments of the Survey Act seem clearly preferable to this somewhat artificial method of construing its provisions. It is certainly unfortunate that the map should only be mentioned in the rules and not in the act itself. As the law stands, a map is apparently only secondary evidence of a boundary, the survey marks being primary evidence of it In practice, the map, with the record of measurement, is obviously the final test, rather than the survey mark. The word "boundary" is not defined in the Act: apparently, the final boundary is a straight line between two survey marks.

21. *Straightening of Boundaries.*—A further difficulty arises in connection with the Survey Act, which must now be discussed. We have seen and have been informed of cases of boundaries, with corrugations which it would be desirable to straighten or, at any rate, to ignore in the preparation of our maps. The practice now followed in the course of Re-surveys is based on rules 11 and 12 of Chapter II and rules 17—21 of Chapter VI of the Survey Manual. Bends may be equalised, if the divergence is not greater than ten links in wet lands or twenty links in

dry land, porambokes excepted. A general practice at present is to apply this rule, if no objection is raised, but to map bends more minutely if such a course is demanded. Though these principles are applied to Re-surveys, the instructions actually refer to *original* Surveys alone, and it is not made clear by the Survey Manual that they are intended to refer to Re-surveys also. Putting this difficulty aside, two questions arise:—

(1) whether the instructions are legal;

(2) whether mapping and demarcation on these lines alter the legal boundary.

22. *Legal and administrative difficulties.*—We are of opinion that rule 11 of Chapter II of the Survey Manual, alluded to above, does not contravene the law, if it is regarded simply as an instruction to the Survey Officer as to the lines on which he should endeavour to secure the ryots' consent to the straightening of their boundaries, but that it cannot legalize the straightening of boundaries independently of his consent; the Survey Act renders it incumbent on a Survey Officer to measure according to existing boundaries, as far as his unit of measurement (the link) permits. If he does so and if the actual bends cannot thus be represented with complete accuracy, the effect of such a process is, not to alter the boundary, but merely to express it with the utmost degree of accuracy which his unit permits. Again, if the boundaries are not represented within these limits (if, for instance, the average prescribed in rule 11 is adopted in the absence of the ryot or without his consent) the legal boundary still remains unaltered, because the operation is illegal and therefore without effect. A Survey Officer must follow a boundary and must follow it as accurately as his unit permits. If therefore any step is to be taken in the direction of straightening boundaries without the ryot's consent, a change in the law is necessary. We cannot, however, recommend such a change in the law, though we are strongly in favour of the straightening of boundaries, both in the interests of the ryot himself and because of the simplification of Survey which would be obtained thereby. To straighten boundaries compulsorily might be definitely inequitable in certain cases: in all cases, it involves an infringement of personal liberty, for which stronger arguments are necessary than we have found. It is significant that one witness, who approves of the proposal, should have to appeal to German practice for its support. From an administrative point of view, a good deal (though not all) of the inconvenience resulting from the existence of corrugated boundaries will disappear, if demarcation is restricted to field trijunctions. Whilst opposed on these grounds to compulsion, we would wish that all that can be done by persuasion and inducement should be done in the direction of straightening boundaries. Crooked boundaries are uneconomical to the ryot, and it is desirable that this should be brought home to him. We may add that it is for the Special Staff, rather than the Survey Officer, to endeavour to induce ryots to straighten their boundaries: a provision to this effect might well be incorporated in the Special Staff Rules.

23. *Clubbing.*—A survey field often corresponds with a holding, but, in the fairly numerous cases in which it represents an aggregate of two or more holdings, we see no objection to the existing rule that holdings be clubbed up to five acres in wet land and ten acres in dry land, subject to the condition (recently prescribed) that no clubbed field shall contain more than twenty subdivisions and at the same time measure more than two acres in wet land or four acres in dry land. In the case of fields of less than these dimensions, it seems unnecessary to limit the number of subdivisions, as they are easily identifiable. We see no objection to clubbing fields of different descriptions (e.g., inam and patta; wet and dry; etc.), and we recommend that rules 11—13 of Chapter VI of the Survey Manual be amended accordingly. The subdivision is the administrative and economic unit; the survey field is merely an unit of convenience, for purposes of mapping and demarcation.

24. *Communal lands.*—We have recommended that porambokes (communal lands) should not be left undemarcated, merely because they are subdivisions. We have also recommended that they should form an exception to our proposals as to non-demarcation of bends. We do not wish to imply by this that all porambokes should necessarily be minutely demarcated. This is neither necessary nor desirable and, though we would wish for more demarcation in some cases, we should

wish to reduce demarcation in other cases. Our information is, for example, that too much has already been done in the matter of demarcating channels (representing about 60,000 stones in the Tinnevelly Taluk alone) and there may be other cases of excessive demarcation. Foot-paths and shifting cart-tracks are not, we think, fit subjects for demarcation. Channels of twenty links' breadth or over, which have been acquired by Government or which are or should be under the control of Government (a control, which is indicated by the existence of sluices or dividing dams worked by the Public Works Department or Revenue Department), should be demarcated, but it is unnecessary, we think, to demarcate channels which are of smaller dimensions or which are not under departmental control. We cannot profitably go into further detail on this subject of porambokes, especially as no detailed rules could be framed which would be applicable to the Presidency as a whole. The subject of village sites will be dealt with later.

C.—Survey Records.

25. The records prepared by the Survey Department and handed over to the Revenue Authorities are:—

(I) A village map on an 8-inch or 16-inch scale.
(II) A field measurement book (or block map ; *vide* above).
(III) A demarcation sketch.
(IV) A stone register.

I.—The Village Map.

26. *16-inch scale recommended.*—This map, apart from its obvious general uses, serves as a key to the field measurement book. There is no possibility of dispensing with it. At present, the fact that the majority of the maps are on the 8-inch scale, but that some are on the 16-inch scale, constitutes an anomaly and is inconvenient to various departments, which have frequently to deal with a series of village maps in connection with irrigation or railway projects, acquisitions, etc. The question arises as to which scale should be adopted. We feel no doubt as to the superior advantages of the 16-inch map, and such is the opinion of the bulk of our witnesses. On the side of the 8-inch map, there is convenience of size. As regards cheapness, there is little to choose. The 8-inch map means less paper, but, on the other hand, it involves more time and trouble in plotting. The 16-inch map is more accurate and shows more details as to bends, etc., and will therefore be far more useful to inspecting officers and to officers of all departments. Further, if this scale is used, the number assigned to each maintainable stone can be entered on the map, thereby obviating the necessity for a separate demarcation sketch. Further advantages are indicated below, when dealing with the field measurement book. Our recommendation that a 16-inch map should be used applies, not only to future Surveys, but also to that periodical re-editing of survey records, the necessity for which must arise from time to time, even in Districts in which accurate Survey and efficient maintenance obviate the need for any form of Re-survey. In this connection, we may note that we were favourably impressed with the system of map-correction in vogue in Bihar, which is based on the use of a blue-line print of the village map, prepared at the time of the preceding Survey. Blue-line prints could be prepared by a colour process in the Central Survey Office; the same zinc plates which are used for the black prints (now in use) can be used also for the blue prints. The extra cost involved would be almost negligible. Five copies should be struck off, whenever a village map is printed. When the necessity for re-editing the map arises, the blue-print map can be brought up to date by *inking in* with black ink all changes in topographical details and in the boundaries of survey fields and *inking over* all field boundaries which have undergone no change. The map thus brought up to date can be reproduced by photography and will then constitute the revised village map. The point of the process lies in the fact that the blue lines disappear in the process of photography (*vide* Mr. Reid's evidence, pages 297–8 of Volume II).

27. *Topographical details.*—Subject to what follows, we have no criticisms to offer on the list of topographical details contained in pages 360—364 of the Survey Manual and hitherto marked in village maps. Many of these details, even if they serve no other administrative purpose, are of great use to inspecting officers, as identifiable points: many of them are also believed to be of use

to the Survey of India. Other details are of use for incorporation in Taluk and District Maps. We consider, however, that the system now in vogue for the representation of village sites is unnecessarily elaborate. Every house, hut, shed or wall is surveyed with accuracy and shown in detail on the map. This takes up a good deal of time, and the information is useless for administrative purposes. We are not aware of the authority under which the Survey Department considers it necessary to carry out this procedure, but the Director of Survey informs us that the information is useful to the Survey of India. This Survey of village sites is deprived of any possible local use it might have had by the non-communication of the measurements to District Officers. We consider that within village sites it is sufficient to survey Public Works Department channels, Local Fund roads and any other really important cart-tracks and to mark public wells as details. Anything beyond this comes under the head of an Urban Survey and should be dealt with under the rules applicable to such Surveys.

II.—The Field Measurement Book.

28. *Possible substitute in certain areas.*—This record, except in block map areas, contains our record of field measurements. The necessity for a record of measurements has been discussed in paragraphs 14—16 above. Its preparation in the form of a plotted map for each field is necessitated by the number and minuteness of the subdivisions, which cannot, in many cases, be represented on a scale of less than forty or eighty inches to the mile. Village maps on this scale would be wholly unmanageable. The record of measurement handed over by the Survey Department to the Revenue Authorities has to form the basis of maintenance for many years and to serve as a frame-work for future subdivisions, as well as for those which are actually on the ground at the time of Survey. In deltaic tracts and other tracts where land is valuable and is constantly changing hands, the field measurement book seems the best and simplest way of providing for all requirements, but, in dry areas of comparatively little value, where fields are large and small subdivisions infrequent, we believe that the field measurement book may be replaced, with economy and without inconvenience, by a tracing from the 16-inch village map (recommended above), on which all measurements and subdivisions can be entered. Tracings have been prepared for us and measurements entered therein in regard to portions of two villages. They will be found at the end of this volume (Appendix II-G). In the first tracing, we have a representation of a portion of Village 45, Vempalli, Cuddapah District, which, we submit, serves all the purposes of a field-atlas; all subdivisions have been plotted and measurements entered, without obscurity, and we believe that any subdivisions which are likely to arise could be plotted with equal ease. Should there be any undue complications in regard to a particular field, it could be plotted separately by the Karnam on an enlarged scale; but our recommendation is based on the belief that such cases will be most exceptional. Even the fact that one or two fields had to be plotted on an enlarged scale at the time of Survey might not be held to render the system inapplicable, provided that the existence of these fields was due to exceptional causes and that there seemed no likelihood of their number increasing unduly. The second tracing represents a portion of Village 55, Chokanandamputur, Srivilliputtur Taluk, Ramnad District, and constitutes a case in which a 16-inch tracing would *not* serve the purpose required. It is, therefore, an example of the type of village for which a field measurement book is an actual necessity. The village will of course be the unit to be taken into consideration, in deciding on the practicability or otherwise of our proposal in any given case. Its economy lies in the fact that it will not be necessary for plotting to be done in the field; the Surveyor will only have to prepare sketches on which he will record the internal and external measurements of each field and from which the 16-inch map will be compiled in the Party Office. If a field measurement book is prepared, the Surveyor, in addition to the preparation of a rough sketch, has to plot a map of each survey field, with its subdivisions, in duplicate. Our proposal will obviate the necessity for this and thereby effect a definite saving in time, expense and paper; on the other side, there is the additional cost of taking a tracing from the village map, but this will be trifling, in comparison with the saving which will accrue. Our proposal would probably be found applicable in a Re-survey of

any of the Ceded Districts and possibly also in Districts like Nellore and Coimbatore.

29. *Advantages of preparing the Field Measurement Book in Manuscript.*—We now turn to the consideration of the cases in which the field measurement book has to be retained. We are of opinion that the ferro-prussiate prints of the field measurement book have not proved an unmixed success. Their defects are (1) that they are ruined by sweat, a very serious defect in this Presidency, (2) that the unequal shrinkage involved in the process of preparation renders them inaccurate and unsuitable for scaling, (3) that they cannot be used for tracing, without the aid of special paper, (4) that they make the Karnam's records unduly bulky, as the paper is thick and only one side of it can be used, (5) that, owing to their bulk, they take up an unduly large amount of space in Taluk Offices, where copies are stocked both for sale and for record, (6) that they cannot be supplied by the Survey Department without delay, which has sometimes, in the past, extended to some years after the conclusion of survey operations. Our proposal is to substitute manuscript copies of field maps for the printed copies now used and to have manuscript copies prepared for sale or departmental use, when required. This would mean an annual saving of about half a lakh of rupees, representing the cost of the tracing and printing establishment in the Survey Office. This proposal, coupled perhaps with a certain measure of decentralization in the work of the Survey Department, might obviate the necessity for a third Gazetted Assistant in the Central Office. At present, two copies are printed for sale and three * for departmental use, in addition to the preparation of two manuscript copies of the original, one of which is the tracing on bank post paper, used in the process of printing and subsequently recorded in the Central Record Office, whilst the other copy is used by the Settlement Officer and subsequently by the Karnam, pending the receipt of the ferro-prussiate prints. The original field maps are now retained in the Central Survey Office as a permanent record. No sufficient reason has been brought to our notice why these originals should not be transferred to and kept in the Collector's Office, where we think that they would be equally safe. This last suggestion has the incidental advantage that the topographical details, which are embodied in the original record alone, would then be available for District use. The copy now used by the Settlement Officer (known as the duplicate field measurement book) could be stocked and kept up to date in the Taluk Office; it would thus take the place of the present ferro-prussiate Taluk maintenance copy. The tracing on bank post paper would no longer be necessary; on the other hand, a third manuscript copy on durable paper would be required for the use of the Karnam. We propose that this copy should be pricked off from the original field map by the Surveyor, at the time when he pricks off the duplicate; it could be inked in by the Karnam, subject to subsequent check in the Survey Party Office. As an alternative, the Karnam might plot this copy; this would have the advantage of affording him excellent practice, but his work would have to be subjected to careful professional check. Assuming (1) that nothing need be retained in the Central Office (or, in the alternative, that no copy need be kept in the Collector's Office), (2) that no copies need be prepared there and then for sale, (3) that no other department requires copies (*vide* the evidence of the Inspector-General of Registration in this connection; page 50 of volume II); the cost of preparation of the Karnam's copy in the manner set forth above and the loss of the fees at an anna a copy now realised by the sale of the ferro-prussiate copies are the only items on the debit side, to be set off against the annual saving of half a lakh of rupees in the printing department of the Central Office and the saving in accommodation in Taluk Offices, to which we have referred above.

30. *Arrangements for granting copies.*—These proposals involve the restriction of preparation of copies for sale to actual requirements: the copies would of course be prepared in manuscript. This has advantages and disadvantages. The advantages are the saving in storage and, we must add, the saving of what appears to be a sheer waste of work and paper under the present system. In Saidapet Taluk, for instance, we find that more than 1,60,000 field maps have been printed for sale; but only 363 of these copies were sold last year.

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* (1) Karnam's copy, (2) Taluk maintenance copy, (3) Taluk reserve copy.

On the other hand, maintenance is still more or less in its infancy, and the general effect of our evidence is to show that field maps are even now valued to some extent by the ryot population and that the demand for copies is likely to increase; it is an important part of the policy of this Presidency in regard to Survey that the ryots and the Civil Courts should make as much use as possible of and attach as much value as possible to all survey maps. We therefore think that, if our proposals are found acceptable, all possible provision should be made for enabling ryots to get accurate copies of the field maps speedily and cheaply. One of the chief grounds for our recommendation to substitute manuscript for printed copies is that the manuscript copies will be more accurate than the printed copies now supplied to ryots. We hope that it will be found possible to employ draughtsmen in Taluk Offices to prepare copies of field maps for sale, on the same principle as that on which copyists are employed at present. Their pay and their numbers would depend on the demand for copies. The cost of a copy would certainly not exceed four annas, against the present charge of an anna. The article supplied would be better, and we do not think that the additional charge would seriously check the demand.

III.—Demarcation Sketch.

31. If our proposals in regard to a 16-inch map and in regard to decrease in demarcation are accepted, this record will no longer be required.

IV.—Stone Register.

32. We have no proposals to make. Limitation in demarcation will result in a great reduction in the number of entries.

33. *Objections to Revision Surveys.*—Paragraphs 18-32 contain our proposals for simplification in the process of Survey. These recommendations could be carried out at a Re-survey, but the Revision Survey rules involve a slavish perpetuation of many of the characteristics which have helped to make maintenance impossible. We beg to place on record our view that, whenever professional survey operations of any kind are necessary, the facts on the ground should be the Survey Officer's chief guide. This recommendation does not of course dispense with the necessity for strict scrutiny in regard to poramboke encroachments. We have recommended the use of the Diagonal and Offset System in all tracts in which any survey operations have to be undertaken in the future, and this recommendation, if accepted, is sufficient to rule out the system of Revision Surveys. The difference in cost between Re-surveys and Revision Surveys is not large even now, and we believe that our recommendations will result in further cheapening and render Re-surveys little, if at all, dearer than Revision Surveys now are. This recommendation is intended to include, as far as administrative conditions permit, all Districts now listed for Revision Survey and Districts in which Revision Surveys are now proceeding. A Re-survey, even in these areas, would undoubtedly be the most economical course, in the long run.

The Survey Department.

34. *Provisional conclusions.*—The following figures represent our provisional conclusions arrived at in paragraphs 9, 10, 11 above as to the balance of work remaining for a Party Unit:—

(*a*) Ryotwari Survey, 83 years.
(*b*) Urban Survey, 13½ years.
(*c*) Zamindari Survey, 60 years.

35. *Ryotwari and Urban Surveys.*—As regards ryotwari Survey, we calculated on an outturn of 350 square miles a year. Having regard to our subsequent suggestions, which, except in the matter of demarcation of porambokes, make for increased outturn, it is probable that the rate of operations will be quicker in dry tracts: we can hardly expect a higher outturn than 350 square miles a year in deltaic tracts, where land is valuable and subdivisions are small. In South Canara and Malabar, where the country is difficult and broken, the outturn would probably be less. We do not wish to prescribe any fixed outturn for the Presidency as a whole; on the contrary, we venture to deprecate very strongly any general rules of the kind; but, for the purposes of this report, we have to take some arbitrary figure for the Presidency, a figure which may not be correct in any one

District. We believe that the figure of 375 square miles will be found not to be excessive as a general estimate. This reduces the work for a Party Unit to 78 years for ryotwari tracts. The urban areas will stand at 13½ years.

36. *Zamindari Survey.*—The zamindari work, which we estimated at 60 years for a Party Unit, is based on an estimated outturn of 400 square miles per year. The only special principle which we would suggest in regard to the method of Survey in Zamindaris, is that each Zamindar should, as far as possible, have the kind of Survey which he wants himself. Even in regard to estates under the Court of Wards, it does not seem desirable that the elaboration of a Survey should go beyond the average opinion of adult Zamindars as to what is necessary in the case of similarly situated estates. A system analogous to that in force in Bihar and the United Provinces will probably be found suitable for adoption in zamindari tracts, it being unlikely that many stones will be maintained in a Zamindari; in fact, the Zamindar's chief object is to arrive at correct areas. *Khandam* lines might be run across each village at intervals of twenty chains for purposes of surveying; only theodolite stations need be demarcated; the only record required is an accurate village map on the 16-inch scale. Hence, our estimate of 400 square miles for zamindari areas, as against 375 for ryotwari areas. Here again, we would deprecate laying down any hard and fast rules as to outturn for the Presidency as a whole. Each estate needs separate consideration.

37. *Five permanent Survey Parties necessary.*—Supposing that, within the next twenty-five years, we assume that 33½ years' work is carried out in regard to Zamindaris, as against 60 years' work (the complete amount of work under that head), the revised figures are 78 years, ryotwari; 13½ years, urban; 33½ years, zamindari; in all, 125 years' work, i.e., twenty-five years' work for five parties. We cannot therefore recommend the reduction of more than one of the existing parties, but we think that that party should be disbanded as soon as possible. This will mean an approximate annual reduction in cost of a lakh of rupees.

38. *Pay and prospects of Survey Officers.*—It will be observed that there is *permanent* work for at least twenty-five years for the Gazetted Officers and subordinates of five parties. We are strongly of opinion that it is desirable that the work should be done by officers and subordinates who are engaged on a permanent footing and who have that incentive to faithful and zealous work which is best supplied by the prospect of permanent service and a pension at its conclusion. The Government of India have alluded to the inadequate pay and prospects of Survey Officers (page 31 of our Order of Appointment). The same topic is dealt with in Mr. Hatchell's evidence and in his note, to be found in Appendix II-A at the end of this volume. We are in general agreement with his proposals. For a small department like the Survey Department, incremental pay is essential. The scale which we would suggest for Gazetted Officers is identical with the scale now in force in the Forest Department: their pay should start at Rs. 380 (the lowest pay which we think an officer recruited from Europe should be given) and should rise in twenty years to Rs. 1,250. The first eight increments should be Rs. 380—40—700 and the last eleven increments Rs. 700—50—1,250. With this increase of pay, the need for the present party allowance will cease. Assistant Directors now in service (whether European or Indian) would have to be brought on the new scale. How this is to be done is a matter of some difficulty; the low rate of pay now drawn by the department is illustrated by the fact that senior officers, who would according to our scale get Rs. 1.250, are only getting Rs. 750, after twenty years' work. Such a recompense for officers whose work involves responsibility and technical skill is discouraging to recruits. We think that the senior officers of the department should be allowed to rise as soon as possible to the Rs. 1,250 grade by liberal instalments, if it is considered impracticable that they should draw that rate of pay at once. We do not consider that any special arrangements are necessary for upper subordinates and we recommend that new recruits to the cadre proposed above should be solely obtained from Europe. Mr. Hatchell's evidence (both written and oral) is supplemented by that of other witnesses and shows conclusively that Indians of the requisite status are not suited by temperament and inclination for the hard out-door work and incessant physical strain involved in superintending a Survey Party; the need

for increased European supervision was the one specific conclusion to which Colonel Creighton was led by his inspection of the work of the Madras Survey Department (page 4 of our Order of Appointment). The present Land Records Tahsildars, etc-, who are now acting as Assistant Directors of Survey, Class V, and working as Land Records Superintendents can be best provided for in the Revenue Department as Deputy Collectors or Tahsildars. Their case will be further discussed in Part V of the report.

39. *The Director of Survey.*—The post of Director of Survey was originally created at Rs. 1,500—60—1,800, but was changed in 1905 to Rs. 1,200—40—1,400, under the impression (for which, as we have shown above, there is no longer any foundation) that the department was shortly to come to an end. In the circumstances, we recommend that the original pay be restored. Proceeding once more on the analogy furnished by the Forest Department, we may point out that, even if our proposal be accepted, the pay of the Director of Survey will stop just short of the pay which can be drawn by a first-grade Conservator of Forests. With prospects of permanent service and pension on these lines, we believe that it willbe possible to attract the right stamp of University men as recruits for the Survey Department.

40. *Necessity for adequate supervision.*—There is strong evidence before us that the minimum amount of gazetted supervision necessary for each party is two officers; Mr. Marjoribanks has pointed out that the best work of the department was done under these (or even more liberal) conditions. When counsels of economy prevailed, supervision was cut down to below this minimum and the department permeated with non-professional workers; Survey under these conditions was carried out doubtless at a substantially reduced cost, but the results are before us, in the shape of proposals for the Re-survey of the Districts concerned; "economical" work of this kind, after dislocating administration for many years, has now to be scrapped; the expense incurred in such Surveys has thus been entirely wasted. In this connection, we would mention that we are strongly of opinion that all Survey Officers should be supplied with tents by Government.

41. *Future strength of the Department.*—Allowing for two officers *per* party and allowing for five parties, with a Director and two assistants in the Central Office, we get thirteen officers. One leave-reserve officer is also necessary. Even this appointment would not avert the necessity for the occasional employment of upper subordinates in gazetted appointments. All these fourteen officers could and should be appointed permanently and the appointments made pensionable. The present cadre is fifteen, including the five posts of Land Records Superintendents; thirteen of these posts are filled up permanently. At least five of the thirteen officers may be expected to retire in the course of the next three years. This leaves six vacancies to be filled up now or in the near future in the proposed cadre of fourteen. The recent proposal for the immediate appointment of six new officers (sanctioned by the Secretary of State) would thus take its place as a part of our present scheme; but the officers should be permanent, not temporary, and their pay should be as proposed above. It would be much better, if they could be appointed *at once* and used to fill up vacancies in the cadre as they occur, their whole service counting for pension. Amongst other advantages in appointing them at once is the fact that they could be trained by the senior officers of the department who will shortly retire.

42. *Photographic Expert.*—A necessary addition to the Central Survey Office, in our opinion, is that of a Printing and Photographic Expert, to be in charge of the work of printing and photographic reproduction of maps. At present, a Sub-Assistant Director is in charge; he was trained for a short time in Calcutta, but is in no sense an expert, and the results in this branch of work are by no means as satisfactory as they should be. A non-gazetted officer of this class could probably be obtained from the Survey of India at a salary of (say) Rs. 300 rising to Rs. 500. In any case, the Survey of India would be in a position to give valuable advice as to the best method of recruitment. Under the control of this expert, economy could be effected by substituting one or more power-machines, in place of the hand-presses now in use.

43. *Other suggested improvements.*—The chief improvements which have suggested themselves to us in regard to the work of Survey Parties are (1)

increased gazetted European supervision (this has already been dealt with). (2) A considerable measure of decentralization; a great deal of the Party Officers' time is taken up in the compilation of statistics and the submission of returns; much of this work could, we think, be cut down and matters left more to the general responsibility of the Party Officer, who would thus have more time to devote to his duties in the office and in the field. (3) Reliance on accuracy, rather than outturn as a test of the work of a Survey Party; we have stated above that harm has been done by laying down general standards of outturn for the whole Presidency; this is one of the contributory causes to the production in the past of work which has failed to stand the test of maintenance. (4) More intimate correspondence between the work of the Special Staff and the Survey and Settlement Departments. The constitution of a Special Staff has done much to define and improve the relation between the Revenue and Survey Departments. In view of the close connection between the departments, we think it important that junior Gazetted Officers of the Survey Department should receive a training of at least six months in general administration as Assistant Settlement Officers. In this connection, we would observe that time is wasted by the existing procedure in regard to objections raised at Survey and Settlement. Appeals against survey proceedings are decided, under Section 12 of the Madras Survey Act, by an upper subordinate officer of the Survey Department. As the law now stands, the appellate authority must be the officer to whom the Survey Officer who passed the order appealed against is immediately subordinate. The Settlement Officer or officer in charge of a Special Staff has, on his side, to issue rough pattas and to invite objections to them. The objections raised before the Settlement Officer include practically all the objections raised before the Survey Officer, as objections to boundaries seldom involve different factors from those dealt with in objections to registration. If these officers arrive at the same conclusion, work is needlessly duplicated; if they arrive at different conclusions, their decisions must lead to confusion and uncertainty. Great inconvenience is caused through the Survey Officer having to deal with these appeals; either the ryots have to be dragged to a distant village, or the Survey Officer must break off his work in order to go back to the village and dispose of the appeal. In some Districts, in which appeals were numerous, Special Officers of the Survey Department have been deputed for this work. A Settlement Officer, when hearing objections to rough pattas, is, in effect, giving the party the opportunity of raising all questions which he could raise under Section 12 of the Survey Act, and we would suggest that this fact be recognised, that the separate notices by and appeals to officers of the Survey Department be done away with and that the Survey Act be amended accordingly. A Revenue Officer, before whom objections of a technical nature are raised, will naturally refer them for opinion to an officer of the Survey Department. Our proposal has received the unanimous assent of all Survey and Settlement Officers consulted. (5) Simplification in the adjustment of costs incurred during a Survey. At present, the work of adjustment involves the entertainment of a special stone account section, as part of the temporary establishment of a Survey Party, and the cost of this establishment has to be recovered from the ryots, as a part of the survey expenses. We would suggest that the lump sum recoverable from the ryots of a whole Taluk for stones and labour be communicated to the Collector, who should recover it by means of a cess, distributed rateably on the same principles as those used in the collection of the local fund land cess and collected from the same persons. This procedure would do away with the necessity for a stone account section and involve less supervision and fewer returns. We see no reason to suppose that there would be any injustice to individual ryots in this simple method of apportionment: so far as it involves any change in the present apportionment, it means that the rich will pay more than they do now and the poor less. The collection would probably be effected more speedily: at present, bills are sent to the Tahsildar in irregular batches, *khandam* by *khandam*, and he collects the money as best he can: thus, the same ryot may be charged two or three small sums by means of successive bills. Under the proposed system, the amount will be collected in the same way as an item of land revenue, and the ryot will no longer be harassed by a succession of petty demands. We must add, however,

that, if this proposal is given effect to, a Party Officer will no longer be able to recoup his survey advance by means of a series of small bills, but will have to recoup it once for all at the end of his work for the whole Taluk. His original advance will therefore have to be raised to at least twice the present amount. This, however, is merely a matter of accounts: if, as we believe, the money will be actually collected quicker under the proposed than under the present system, the Government will to that extent be a gainer.

PART III.—MAINTENANCE.

Q. 2.—To what extent can the Maintenance of Land Records and Maps by the Revenue Staff be simplified and rendered more efficient?

44. *Introductory.*—In the question on which we are directed to report, the term "maintenance" seems to be used in a wide sense and to include the keeping up to date of the land registry, as well as survey maps and marks. In this Presidency, the term has hitherto been more frequently used in the restricted sense of keeping survey maps and marks up to date and in good order, and it is in this restricted sense that we use the term in this report. We shall deal with the maintenance of the revenue registry in Part IV. In Part III, we confine ourselves to suggestions for keeping survey maps and marks up to date.

45. *Maintenance a substitute for Revision Survey.*—Given an accurate Survey succeeded without undue delay by efficient maintenance, there should be no necessity for further professional Survey, except in particular restricted areas, with reference to large acquisitions, large irrigation schemes, large extensions of cultivation and changes in physical features on a large scale. A periodical re-issue of maps will always be necessary, but this process and the occasional clearing up of arrears can best be carried out by the Settlement Officer, in connection with Re-settlement; professional assistance is required (1) for revising topographical details, (2) for printing maps. It is, however, desirable that the Revenue Department should do their best to keep topographical details up to date.

46. *Maintenance has not been a failure.*—Maintenance, in the sense of maintenance of land records (including survey records) is for the future; even in its restricted sense, it has hardly begun. The phrase has now been current for more than ten years, but the so-called maintenance staff has generally been struggling with accumulations of arrears. This fact, coupled with some misapprehension on the part of Revenue Officers, has led to a vague opinion that maintenance is a failure. In Districts like Vizagapatam and Kurnool, in Tirupattur Taluk and in the northern Taluks of Salem, where maintenance has been in force for four years or more, our information is that the results are always fair and sometimes excellent.

47. *Delay between Survey and Maintenance.*—The delay which at present occurs between the completion of Survey and the commencement of maintenance would be obviated (1) by making the Settlement Officer or Special Staff Officer, as the case may be, responsible for all departments of maintenance, until he hands over the records to the local officers, (2) by the prompt preparation of a field measurement book or other record of measurement and the immediate handing over of a copy to the agency responsible for maintenance. The second point has been already touched upon in paragraph 29 above, in connection with our proposals for preparing the field measurement book in manuscript.

48. *The Karnam's share in Maintenance.*—To a large extent, maintenance depends on the Karnam; he and the Village Munsif are, however, at the beck and call of all departments, and the degree of time and trouble involved in this can hardly be estimated by statistics. The Karnam's work is bound up with the present system of village accounts, which, as observed in paragraph 12 above, is and will probably continue to be exceedingly complex. Further enquiries will probably be found necessary in connection with our proposals in Part IV for certain changes in the village accounts. These enquiries would afford an excellent opportunity for an examination of the village accounts as a whole, with a view to possible simplification.

Even as matters stand, we do not intend to suggest that the Karnam is incapable of taking the place assigned to him, but it is desirable (1) to make his task as light as possible, (2) to give him every possible incentive to good work, (3) to see whether his minimum standard of efficiency cannot be somewhat raised.

(1) *The Karnam's stone-inspection may be lightened.*

49. Our proposals as to demarcation will materially reduce the work of stone inspection in areas listed for Re-survey, by almost halving the number of stones to be inspected. When even the reduced number of stones exceeds 400, the Karnam's duties might be further curtailed, by spreading the period of inspection over anything from two to four years. A definite number of stones (say, the stones in one *khandam*) should be inspected every year; otherwise, there is the danger of nothing being done until the third or fourth year. Subject to this condition, the witnesses have expressed general concurrence with our proposal, which, as observed in paragraphs 54—56 below, is applicable to the whole Presidency, and not merely to areas listed for Re-survey.

(2) *Proposals for the remuneration of the Karnams.*

50. We would give the Karnam a fee for subdivisions and for replacing stones. Eight annas may be charged for a subdivision, of which the Karnam may be given six annas. This may require legislation. Most of our witnesses are agreed in thinking that the fee will be a stimulus to the Karnam and will subserve the end of accurate registration. The party who pays for the subdivision should be entitled to a copy of the map signed by the Revenue Inspector. Beyond this, we would make no charge for mutation proceedings. The charge for replacing a stone may, with advantage, be regarded as a penalty and fixed at one rupee, subject to the exception noted below. This would involve an alteration in the wording of Section 14 of the Survey Act; at present, only the actual cost of replacement can be recovered. The Karnam may be given eight annas out of the rupee collected; he will have to make his own arrangements for getting the labour required for replacing the stone. In cases in which prickly-pear or dense vegetation had to be removed, the charge and the Karnam's fee might be doubled.

(3) *Possibility of raising the Karnam's standard of efficiency.*

51. This will be dealt with in Part V of the report.

52. *Acquisition.*—An essential condition of maintenance is that the Revenue Department should start with accurate maps; it is also necessary that the maps should continue to represent the facts. One of the chief possible sources of divergence from the facts is land acquisition. Our witnesses have brought numerous instances of faulty procedure to the notice of the Committee. There are two main causes: (1) want of survey knowledge on the part of Land Acquisition Officers, (2) failure to carry out rules. As regards (1), it is essential that important land acquisition operations should be conducted by officers who have been trained in Survey and (preferably) who have served in the Land Records or Settlement Departments. (2) One instance of failure to comply with rules has been specially brought to our notice. Acquiring Departments, when preparing sketches, frequently fail to co-ordinate them with the survey record; it is the duty of the acquiring officer to satisfy himself that these conditions have been fulfilled or to have a fresh sketch prepared, but he does not always do so. The result is that the map, on which the acquisition proceedings are based, though perhaps carefully prepared in itself, is found later on not to show correctly the position of the land actually acquired. In some forest cases again, confusion has arisen, because demarcation has not preceded the notification. The demarcation is made subsequently and may completely alter the boundary, but no fresh notification is submitted for publication. These inaccuracies throw difficulties in the way of maintenance, delay the completion of Re-survey and cause serious administrative difficulties.

53. *Clubbing.*—The Committee has considered the question whether subdivisions should be clubbed and re-numbered once in five years (*vide* the proposals for re-writing the A register set forth in paragraph 67 of the report) or only once

in thirty years. On the one hand, more frequent clubbing makes for simplification; on the other hand, it disturbs continuity. The Committee as a whole is not prepared to decide between these two alternatives, but is in any case opposed to clubbing and re-numbering as a part of ordinary maintenance.

54. *Demarcation under the Block Map System.*—In Part II of our report, we have recommended that all future Surveys should be carried out on the understanding that demarcation and maintenance will be restricted to field trijunctions and theodolite stones. We now have to consider how far the same principle is applicable to the maintenance of past Surveys. As already explained, about 29,000 square miles will, sooner or later, have to be re-surveyed: in regard to the remainder of the ryotwari area concerned (about 59,000 square miles), our object is to render Re-surveys unnecessary by means of systematic maintenance. So far as the area of 23,608 square miles, already surveyed under the Diagonal and Offset System is concerned, no further discussion seems necessary; the conclusions arrived at in regard to future Surveys are obviously applicable to the maintenance of areas already surveyed on this system. The block map tracts in which the Survey is capable of permanent maintenance do not cover a large area (1,781 square miles); the great bulk of the block map areas will have to be re-surveyed. We would restrict maintenance in all block map tracts to field-trijunctions. We recognise that there would be some advantage in maintaining stones at other important bends, as they would supply an additional check and thereby, perhaps, render a reference to the long G. lines less frequent, but on the whole we do not consider that this advantage outweighs the economy in time and trouble which would result from the adoption of our proposal. Figures in regard to demarcation are given in Appendix II-C.

55. *Demarcation in "triangle" areas.*—The "triangle" areas of this Presidency are extensive (32,671 square miles), and the work is usually of a high order of efficiency. It is therefore very desirable that they should be maintained, if possible. Theoretically, maintenance of a "triangle" area involves the upkeep of stones at all bends of a field, as each bend constitutes a part of the frame-work on which the Survey of the village is built up. Further, the demarcation of all bends would undoubtedly make the Karnam's task of subdivision and replacement of stones easier. On the other hand, maintenance on these lines would keep the number of maintainable stones at so high a figure as to make the Karnam's task of stone inspection an unduly severe one and one which it may well be that he could not properly fulfil. In fact, if this were the only alternative to a Re-survey of these areas, we should be inclined to prefer the latter solution. There is, however, a third alternative, which we believe to be practicable and which, in any case, we consider well worth a trial, namely, adherence to our general recommendation of restricting maintenance to field trijunction stones. The Karnam's task in plotting subdivisions will be rendered easier by the acceptance of our proposal (*vide* paragraph 29 above) to prepare manuscript maps for the field-atlas; these would attain to a high degree of accuracy, and measurements could be scaled from them.

56. *Demarcation in Ganjam, etc.*—A special note is necessary in regard to districts like Ganjam, as the Committee's general proposal to restrict demarcation to trijunctions does not seem to afford sufficient relief to that District, in parts of which survey fields run down to ten or twenty cents or even less. With reference to G.O. No. 3185, Revenue, dated 4th November 1913, these survey fields have been clubbed into groups on the field map, and stones on the perimeters of the clubbed fields are being maintained. Even this arrangement involves the maintenance of an unduly large number of stones and, following the general line of reasoning enunciated in regard to triangle areas, we are compelled to recommend that maintenance in these areas be restricted to the trijunctions of these groups of fields. We realize that the recorded measurements refer to the individual fields, not to the groups into which they have been combined; this circumstance adds a new difficulty to maintenance. The most satisfactory arrangement would have been one by which diagonals were drawn across the grouped fields and offsets taken; each grouped field would then have been maintainable as an ordinary Diagonal and Offset Survey Field, and it is not unlikely that in the long run a Re-survey on these lines will be found the most satisfactory solution of the

difficulty; we have not however included these tracts in our proposals for Re-survey. In particular fields in which the existing state of things is found in practice to lead to grave difficulties in making subdivisions, steps on these lines might well be taken by the Revenue Staff. In ordinary cases, however, stones (though not maintained) will probably continue on the ground in sufficient numbers to enable new sub-divisions to be made without resort to this method. If manuscript field maps are used, they will be suitable for scaling and will thus supply a means of additional check. In Chittoor and certain Taluks of Cuddapah, similar difficulties may be found to exist. If it is found, on reference to Collectors, that the number of stones in such cases would be too large to maintain (even under a system of rotation, as recommended above), the question of adopting the methods suggested in regard to Ganjam may be considered in the case of these Districts also. We have alluded in Part II to certain long, narrow and highly corrugated fields in the Erode Taluk and elsewhere. It seems impossible to maintain such fields on the Triangle System. In our opinion, they should be re-surveyed. These are cases in which it is particularly desirable that efforts should be made to induce the ryots to straighten their boundaries; this point has been discussed in paragraphs 21 and 22 above.

PART IV.—REVENUE REGISTRATION.

Q. 3.—What steps are necessary to render the Land Revenue Registry a more accurate and useful representation of actual facts?

Q. 4.—Is it feasible to improve the present system of granting Pattas?

INTRODUCTORY.

57. *Legal liability for correct registration.*—The principles of land revenue registry are laid down in Regulation XXVI of 1802, which makes it clear that the liability to pay revenue is based on title (proprietorship) and that a complete record of mutations (transfers of land from one proprietor to another) is an essential part of land revenue administration. Though these principles have never been definitely challenged, there is overwhelming evidence to show that our registers are not what they would be, if the principles were followed out in practice. In this respect, this Presidency falls definitely behind other parts of India in which the ryotwari system or something in the nature of the ryotwari system prevails.

58. *Administrative disadvantages of inaccuracy.*—Apart from the essential consideration that, by failing to keep registry up to date, the State is neglecting a duty imposed on it by law and equity, we have a considerable body of evidence to show that the existing state of things causes general uncertainty as to title, gives scope for oppression and favouritism on the part of Village Officers, leads to excessive litigation, frequently based on improperly drawn up documents or on oral evidence, true or false, and helps to explain the somewhat contemptuous attitude sometimes adopted by Civil Courts towards revenue registers, maps and proceedings (*vide* paragraph 88 below). Village Officers have notoriously to keep private registers of occupancy, irrespective of the revenue registers, in order to make the collection of revenue possible. The general trend of our evidence is to show that, except for a short interval after each Settlement, about 50 per cent. of the names entered in the revenue register do not correspond with the facts, the registered pattadar *not* being the proprietor, nor in many cases the person in independent possession of the land; the entries sometimes stand in the name of deceased persons. This is clearly anomalous and demoralizing; it is also prejudicial to discipline: for the Karnam, having a private monopoly of the knowledge required for the purpose of collecting revenue, has his immediate superiors to some extent in his power, as his suspension or dismissal might make the prompt collection of revenue very difficult. Another result of the inaccuracy of the registers is that, at present, Revenue Authorities have frequently to seek the aid of the Registration Department, in order to obtain information in connection with loans and cases of co-operative credit, land acquisition, etc.

59. *Defects in the existing A Register (Diglott).*—We would suggest that there should be one complete register of title, possessing as far as possible the element of permanence or, at any rate, continuity. The chitta (Village Account 10)

and the A register purport to fulfil this function to some extent, but neither these registers nor any other registers fulfil it completely. The chitta will be dealt with below. Changes in the classification and extent of fields are entered in the A register, but Column 13 of this register, which contains the name of the pattadar, remains unchanged between Settlements; mutations in title are embodied in the adangal and chitta. This divorce between the procedure as regards ownership on the one hand and other permanent changes on the other hand seems to have no justification and has the defect of seeming to suggest that changes in ownership are matters of comparatively little importance.

60. *Defects in the law.*—The law in this Presidency, as explained above, is based on the principle that the proprietor alone should be registered as pattadar. The strictest conformity with the law would, however, leave untouched a fundamental difficulty, namely, the fact that the proprietor is frequently not in occupation of the land and that in such cases the entry of his name in the registers will be of little or no help in the collection of revenue. Instances of this occur on the West Coast, where the person on the land is frequently not the owner (jenmi, mulgar), but a kanomdar or mulgenidar. It is believed that there are instances of sub-proprietorship in Chingleput and perhaps in other Districts, in which the proprietor (sometimes called a mirasidar) simply receives a pepper-corn rent, whilst the sub-proprietor pays the revenue. Another instance is afforded by usufructuary mortgages. There are again a large number of cases all over the Presidency in which groups of co-parceners or joint families are represented on the land by a person who may be a member of the whole body, but who is not himself the sole proprietor. These cases lead to a further consideration, namely, that, as the law now stands, proprietors are the only persons from whom revenue can legally be collected. Kanomdars in Malabar can make themselves jointly liable for revenue by taking action under Section 14 of the Malabar Land Registration Act of 1896, and it seems probable that similar legislation may be introduced for South Canara. This provision, however, is not much used in Malabar. Co-parceners and members of joint families may be held, even as the law now stands, to be jointly and severally liable for the whole of the revenue due from the body of which they are members. On the other hand, to make mortgagees liable for revenue would seem to need legislation. Mortgagors can apply for transfer of registry in favour of mortgagees, but the question arises whether a temporary transaction can lawfully be made the subject of a mutation, having regard to the wording of the regulation quoted above, which seems to preclude the registration of persons who are not proprietors. Can the State recognize an attempt on the part of a proprietor to divest himself temporarily of his status, so far as the revenue registers are concerned, for the sake of escaping liability to payment of revenue? It must be added that this procedure derives some sanction from the provisions of paragraph 3 (2) of B.S.O. 31.

61. *Proprietors and quasi-permanent occupants should be registered.*—In other Provinces, a Record of Rights is not merely a record of absolute title; still less, is it merely a record of persons who, for purposes of convenience, are held liable to pay revenue. It is in many cases a record of all economic transactions which centre in particular holdings. In Madras, it seems unnecessary at present to go as far as this; but it is clear that there is need for an accurate record which shall include (1) proprietors, so far as we can ascertain them, (2) usufructuary mortgagees, mulgenidars, kanomdars or representatives of corporate bodies; all these occupants are persons whose rights are not of a purely temporary character and whose position renders them fit persons from whom to collect revenue in the first instance. To omit group (1) is to abandon law and principle; to omit group (2) is to leave the Revenue Department at the mercy of the Village Officers and their private note-books.

62. *Tenants, etc., need not be registered.*—At present, the Revenue Department has chiefly to rely on the Registration Department (which keeps a subsidiary index, giving a list of documents registered in connection with each field and subdivision) and on *ad hoc* enquiries for ascertaining the economic condition of the people. Examples of such enquiries are furnished by the proceedings of Settlement Officers. So far as Madras is concerned, this seems sufficient. Rents are not the primary basis of assessment in this Presidency. There is no system of permanent tenancy

primarily based on long possession, such as is generally found in Northern India. So far as we can ascertain, there is no immediate likelihood of tenancy legislation nor of a limitation of the enhancement of ryotwari land revenue, a limitation which would naturally carry with it a limitation of the proprietor's power of raising the rents of his tenants. It does not therefore seem necessary at present to undertake the additional work and expense involved in including this information in a Record of Rights. Should such a step ever be found necessary, the registration of statistics on these points would merely be an extension of the principles just discussed and of the procedure proposed below. These remarks and those which follow do not apply to zamindari tracts, which hardly come within the scope of our reference and for which separate legislation has been undertaken.

Proposed A Register.

63. *Column* 12.—The form of A register which we propose to substitute for the present A register (diglott) and which will form a portion of the proposed Record of Rights will be found in Appendix II-F at the end of this volume. Column 11 contains the name of the proprietor. Column 12 contains the name of the quasi-permanent occupant, who may or may not be the same person as the proprietor. In the case of some occupants (e.g., usufructuary mortgagees), Revenue Authorities may find themselves in the position of being unable to use coercive processes for the collection of revenue. As we have observed above, there would be great advantages in making quasi-permanent occupants legally liable for the payment of revenue: in any case, the proposed procedure brings their names and existence into the light of day; at present, they lurk in the obscurity of the Village Officer's note-book. Occupants, as such, are liable in the Punjab and Bombay for payment of revenue in the first instance. In order to make them liable in this Presidency, the Revenue Recovery Act seems to require amendment. The definition of land-owner in the Punjab Land Revenue Act (Act XVII of 1887) includes "persons who are in possession of an estate "or any share or portion thereof or are in the enjoyment of any part of the profits "of an estate." "Estate" in the Punjab usually means "village" and corresponds to what are called ryotwari tracts in Madras. In Bombay, persons in lawful possession of land, other than tenants, are liable to pay revenue [Bombay Revenue Code, corrected up to 1913; Section 136 and Section 3, Clauses (11) and (16)].

64. *Column* 11.—We propose to enter the manager of a joint family in Column 11, but no attempt will be made to record the names of the individual members of the family or the numbers of their shares, as these are continually changing. The only feasible attitude, as the law of Hindu succession stands, is to regard members of an undivided joint family as a corporation, and this is the practice in Bombay. As regards other coparceneries, it seems very desirable to enter all the sharers; also their shares, when ascertainable. This will be a guide to the collecting agency; in the last resort, all the sharers are jointly and severally liable for the whole revenue. If a particular share were mortgaged, the mortgagee of that share, if in possession, would be entered in Column 12, as such.

65. *Column* 13.—Column 13 of the proposed register has to be entered up from the mutation register (described below), so far as changes in proprietary or occupancy rights are concerned. In regard to other changes (changes from wet to dry, poramboke to ayan, etc.) we propose no change in the existing procedure, except that they should be entered in Column 13, not, as at present, in the remarks column. We do not propose to have corrections made in any of the first twelve columns of the register, so long as it remains in force, but Column 13 will give sufficient information as to the nature of all changes in the preceding columns and will also quote the authority for them. Changes in proprietary rights will thus be entered up in the same manner as other changes of a permanent character; this will obviate the anomaly noticed in paragraph 59 above. Changes in occupancy will be similarly kept up to date and will be the subject of mutations, thus regularising the procedure which is now surreptitiously carried out in the Village Officer's note-book. Column 13 will contain a great deal of information; the register will probably have to be printed across a double page, in order to allow sufficient space for the entries in this column.

66. *Public and communal lands.*—As regards porambokes, we would suggest that the proprietor (Government, Railway Company, Municipality, Local Fund) should be entered in Column 11 and that the department which holds the land or the purpose for which it is held or both should be entered in Column 12. Municipalities and Local Funds may have full proprietary rights over land, in cases in which they have obtained it under the provisions of the Land Acquisition Act; but, in cases in which they have come into possession of land by statutory provision or special grants, Government may retain reversionary rights. In the latter class of cases, Government should be entered as proprietor in Column 11 and the Municipality or Local Fund as occupant in Column 12. In the case of assessed waste, Government should be entered as proprietor in Column 11 and the word "waste" entered in Column 12. The remarks column might, as Mr. Marjoribanks suggests, contain particulars as to special grants, cowles, hypothecations to Government as security for loans, etc.

67. *Register to be re-written periodically.*—We consider that the proposed A register, if it is to be of real use, cannot remain as it is from Settlement to Settlement; the entries in Column 13 would become unduly numerous, and to ascertain their total effect would be a tedious process. We think that five years would be a convenient interval for re-writing it. One-fifth of the A registers in a firka might well be re-written each year; thus, the first batch would have to be taken up a year after Settlement and so on. We would have the registers prepared in the vernacular only. They should not be printed, but written in manuscript on printed forms. Each inter-settlement edition would be written by the Karnam, checked by the Revenue Inspector and signed by the Tahsildar in token of correctness. The edition compiled at Settlement would also be in manuscript, but would be signed by the Settlement Officer. The information contained in Columns 6, 9, 10 of the present settlement registers ("dry group or wet class," "class and sort of soil" "taram,") can be completely embodied in a concentrated tabular form, as a part of the descriptive memoir, which could continue to be printed as at present and would not be re-written except in connection with a Re-settlement. We have omitted these columns from our proposed register. Occasionally, a mutation (e.g., a transfer from unassessed to assessed) may involve a change in this portion of the descriptive memoir, but, even now, changes in the memoir have to be made, as occasion arises. One copy of the A register would be in the Taluk Office and the other copy with the Karnam. District Registrars and Sub-Registrars are at present supplied with copies of the Diglott, but the Inspector-General of Registration informs us that it would meet his requirements even better, if, immediately after the conclusion of a Settlement, the Settlement Authorities would supply his subordinates with information as to old and new survey numbers and areas of fields. The possible requirements of Deputy Tahsildars are touched on in Part V of the report. We doubt whether any other officer requires a copy of the register or could keep it up to date, if he had it. If necessary, Collectors can be consulted on this point. The abolition of the practice of printing the settlement registers as a whole will mean a considerable saving.

MUTATION REGISTER.

68. *Form of Register.*—We have now to discuss the procedure in regard to changes in proprietary and occupancy rights (Columns 11 and 12 of the proposed A register). For changes of these kinds, we recommend the introduction of a new register, to be called the mutation register, which will take the place of the case files now used in connection with such mutations. The form of the proposed register will be found in Appendix II-F at the end of this volume. The columns which we have entered seem to be the minimum required for the purpose. The register will be in foil and counterfoil. The counterfoil, in addition to the information given in the foil, allows for (1) the Karnam's report of the occurrences (sales, usufructuary mortgages, changes in kanom or mulgeni rights, succession cases, etc.), the Revenue Inspector's enquiry and the Tahsildar's or Deputy Tahsildar's further enquiry (in disputed cases). The register should be a *complete* record of all the proceedings, except for the original petition of transfer, when there is one. The Deputy Tahsildar's or Tahsildar's order (in disputed cases) or the Revenue Inspector's order (in undisputed cases) will be written on the

counterfoil, the substance of the order being also entered (or initialled) there and then in the foil by the officer passing the final order. Each foil and counterfoil will represent a full page of the register. Each page should be machine-numbered so as to prevent fraud. The foil will remain with the Karnam: the counterfoil will be sent to the Taluk Office, where the Taluk copy of the A register will also be kept; this procedure will apply to all cases, whether disposed of by Tahsildars, Deputy Tahsildars or Revenue Inspectors. Whether the Deputy Tahsildar should have an additional copy of the A register and keep it up to date as regards his own Division is a matter which is touched upon in Part V of the report. There should be a special clerk in the Taluk Office, entrusted with the duty of seeing that the substance of each mutation order is entered up in Column 13 of the Taluk copy of the A register. It will be for the Tahsildar, Deputy Tahsildar and Revenue Inspector to make a point of systematically checking the Karnam's copy of the A register, whenever they visit a village, in order to see that it is kept up to date and corresponds in all particulars with the entries in the mutation register. A similar process of check will be a most important part of the Jamabandy Officer's duty. The subject matter of the mutation register is co-extensive with changes in Columns 11 and 12 of the proposed A register; it will therefore include darkhasts and relinquishments, as well as transfers, but will not include changes in the classification of fields, assessment, etc., even when such changes are preliminary to mutations. As an example, let us suppose that A encroaches on some land registered as burial ground poramboke. It is ascertained that the portion of the burial ground poramboke encroached upon is not required for that purpose or for any other communal purpose. The portion is accordingly subdivided off from the rest of the burial ground poramboke, transferred to ayan and assigned to A. In such a case as this, the subdivision and transfer should pass through Village Account 3, as under the present procedure, but the proceedings in relation to the assignment of the land to A should be entered in the mutation register. The substance of orders in the mutation register will have to be embodied in Village Account 3, in cases of darkhast or relinquishment or in any other cases in which the information is required for embodiment in Enclosure A to that account.

69. *Mutations should be decided locally and publicly.*—The point to which we attach most importance in regard to the mutation register is that the enquiries prescribed therein, whether held by Tahsildars, Deputy Tahsildars or Revenue Inspectors, should be held publicly in the village. Our evidence shows that ryots are disposed to look with hopefulness on a system under which our registers may become really accurate representations of facts; but the existing procedure is calculated to damp rather than stimulate any enthusiasm on their part. The universal experience of Settlement Officers and of officers in charge of Special Staffs is that their enquiries, which are held in villages and conducted with some ceremony, attract considerable interest and that, in 99 out of 100 cases, they arrive at the truth with no great trouble and with the seal of public approval. The result is that, when a new Settlement is introduced, the registers are found to be practically correct; errors gradually accumulate from this point onwards, until the registers eventually cease to represent the facts in a majority of cases. It is procedure of the kind just described which we should wish to stereotype. Officers holding such enquiries would do well to *tom-tom* in advance their arrival in a village and the fact they will hold enquiries into cases of mutation. In this way, they will have the best chance of getting complete information, not only in regard to cases which the Karnam has previously brought to notice, but also in regard to cases which, through fraud, carelessness or *bona fide* ignorance, he has failed to bring on the record. Our procedure will also tend to promptitude, and the substitution of a single page of a register for an elaborate case-file constitutes an additional advantage. In Bombay and in the Punjab, where conditions approximate most nearly to those in Madras, this practice is in vogue. Its adoption will perhaps involve some alteration in B.S.O. 31, even as recently amended. For instance, the first sentence of paragraph 11 of that Standing Order is, in our respectful opinion, liable to misapprehension. The rules should, as it seems to us, make it clear that Tahsildars or Deputy Tahsildars are not to be hampered by frivolous objections to transfers; these officers are there to dispose

of cases *coram populo* on their merits. Their work will have to be judged by quality, rather than quantity, and any tendency to expedite disposals by rejecting applications on technical grounds should be suppressed. The fact that a Tahsildar is at present unable to tour as much as he should do, by reason of heavy office work, and the fact that his tours are of a somewhat mechanical character are difficulties which have to be overcome; this matter will be touched upon in Part V of the report. Here, we would add that it would be an additional and independent advantage, if Tahsildars could be relieved of some of their sedentary work and placed in more intimate and sympathetic relations with the ryots of their Taluks. Disputed cases of mutation (with which alone the Tahsildar or Deputy Tahsildar will be concerned) will not be very numerous, and it would usually be sufficient if all cases of the kind could be settled by a single visit to the village in the course of the year; the Tahsildar will naturally visit important villages more frequently, in connection with his other duties. We would strongly recommend that the affairs of a village should be disposed of in the manner we suggest, even at the cost of a few months' delay, rather than that they should be settled in the Taluk with no publicity, at the cost of inconvenience to the party and with numerous opportunities for furtive oppression and favouritism. Disposals in Taluk Offices mean the intervention of greedy, unintelligent or jaded Taluk subordinates, and it is this evil, amongst others, which we wish to obviate. All entries in the mutation register should be made in the vernacular, including the reports and orders.

70. *Copies of Mutation Orders.*—The parties should, we think, be entitled to copies of the mutation sheet. This would be subject to serious objection, if it involved putting them in possession of intermediate recommendations. It will, however, be noted that we have made no provision for *recommendations* by the Karnam or Revenue Inspector. The business of the Karnam is simply to note the information received and facts elicited (which will usually take the form of statements), not to give an opinion. Similarly, the business of the Revenue Inspector, in cases which he does not finally dispose of, is to elicit facts and record statements, not to make recommendations. The only opinion which will be on record is that of the officer (Revenue Inspector, Deputy Tahsildar or Tahsildar) who finally disposes of the case, and this the party is entitled to know.

71. *Revision of Mutation Orders.*—In view of the importance which will attach to mutation orders, we think that the Divisional Officer should have the power of revising the orders of the Tahsildar or Deputy Tahsildar. The Divisional Officer's order on appeal should be absolutely final. There is, however, the possibility of the Divisional Officer, in the course of his ordinary tours, or the Collector or the Divisional Officer, in the course of jamabandy, finding time to dispose of some cases of this kind. We would welcome such intervention on the part of Gazetted Officers: in such cases, the Collector or the Board of Revenue, as the case may be, should have similar powers of revision to those suggested for the Divisional Officer in the case of orders passed by a Tahsildar or Deputy Tahsildar.

72. *Issue of Process.*—Act III of 1869 authorises Tahsildars and Deputy Tahsildars to issue process in connection with revenue enquiries. Presumably, the powers conferred by this act would apply to enquiries in regard to mutation procedure (which are recognised by Regulation XXVI of 1802), but it is desirable that their powers in this respect should be free from doubt and we would suggest, though with some hesitation, that similar powers be given to Revenue Inspectors. This almost amounts to a necessity, if their enquiries are to be exhaustive. The present generation of Revenue Inspectors are of a higher class (at any rate, in the south of the Presidency) than the class of officer with whom we are familiar in the past; many of them are graduates. Section 135 E of the Bombay Code deals with this point: if the words "or Village Accountant" were omitted, the section would meet the requirements of this Presidency.

The Chitta and Patta.

73. Two other accounts have now to be considered; firstly, the chitta (Village Account 10), which is a ledger statement, showing the revenue liabilities of each proprietor, secondly, the patta (Village Account 11), which

is an individual extract from the chitta. The question has arisen whether the chitta should be a part of the Record of Rights. The second part of the chitta could clearly not be so. It includes items of a purely temporary character, such as charges for the unauthorized occupation of land or use of water: charges of this nature neither confer nor recognise rights. The first part of the chitta would be merely a compilation from the A register (as revised) and would not contain all the information given in that register: it is therefore preferable that the Courts (*vide* paragraph 91 below) should deal with extracts from the latter document, in which case it seems unnecessary to make the chitta a part of the Record of Rights. What the chitta and patta really represent is a matter on which there is some uncertainty. The form of these documents does not show that they are leases or muniments of title or anything, in fact, but bills, but there is undoubtedly a general idea that in some way a patta supports a plea of title; and it is the only document given to a ryot which in any sense corresponds to a lease. All ryots whom we have examined have desired that the patta should be issued in the name of a *proprietor*: they raise strong objections to the issue of a patta in the name of an usufructuary mortgagee, being evidently under the impression that Government would be thereby attorning to the mortgagee as proprietor. As regards Malabar kanomdars (who may be regarded as lessees or mortgagees of a sort), there is a difference of opinion: some ryots would have the name of the kanomdar entered in the patta, as well as that of the jenmi: other ryots would have the jenmi's name alone entered. In South Canara, the ryots would prefer to have the mulgenidar's name entered, as well as that of the mulgar. We consider that to add an extra column in the chitta and patta and to enter therein the name of the person entered in Column 12 of the revised A register would be a marked improvement on the present system, as it would give official recognition to the fact of occupancy and would also give official authority to the collection of revenue from occupants: nor would such a step, we think, be too far in advance of public opinion, even as matters now stand. It would confer status on the occupant on the one hand, but on the other hand it would separate off his position from that of the proprietor. Whether revenue can be *legally* collected from occupants is another matter: we have discussed this above. The document to which importance must ultimately attach as a muniment of title is the extract from the Record of Rights (A register) to which we refer in paragraph 91 below. When this fact becomes generally recognised, the patta will no longer be regarded as connoting title but simply as a bill for revenue. It may then be found feasible and convenient to have chittas and pattas made out with reference to occupants, rather than proprietors, but such a step, if taken prematurely, might give rise to suspicion and misunderstanding and thereby imperil the success of our proposals for the introduction of a Record of Rights.

Record of Rights.

74. *Connection between Survey and Revenue Registry.*—We have now to consider what legal rights and obligations adhere or should adhere to the proceedings discussed above. We may remark, *in limine*, that we cannot see any theoretical or practical reason for a distinction between a Survey and the other operations which culminate in registration of title (Record of Rights). The final object of these operations is to enable Government and the ryots to know who has to pay revenue and why: to put it differently, both parties should know the position, area and classification of every field and the person or persons occupying the position of proprietor in relation to that field. A map is useless, unless we know who owns the fields represented therein: a register of title is useless, unless we know the subject matter of the title, i.e., the exact piece of land to which it relates. As an instance of the practical inconvenience resulting from the divorce of the various operations which culminate in a Record of Rights, we may note that making a subdivision (an almost daily transaction, if the whole Presidency is included) is at present only legal, if regarded as a fresh Survey and made under the provisions of the Survey Act. In reality, the Survey of a District and the making of a subdivision are simply more or less important subsidiary operations undertaken with the general object of securing accurate and up-to-date registration of title. The interdependence of a Survey and of the revenue enquiries and proceedings which culminate in a Record of Rights is illustrated by the account of the proceedings

in regard to the South Vallur Estate, Kistna District, to be found in our evidence (Volume II, page 163).

75. *Law as to Survey and Revenue Registry.*—In the Madras Presidency, the elements of a Record of Rights, in this extended sense, are embodied in two independent statutes, the Madras Survey Act and Regulation XXVI of 1802. Orders passed under both the act and the regulation are final and conclusive. In the case of the regulation, this provision has been deprived of all force by decisions of the High Court (*vide* Circular Orders of the Court of Sudr Udalat, dated 17th September 1832; Madras High Court Reports, Volume III, pages 134–136; Indian Law Reports, XXX, Madras, page 41). In the case of the Survey Act, we have found no similar authoritative ruling, but we are informed that subordinate courts show marked reluctance, when called upon to administer the more stringent of its provisions. Witnesses of legal experience have informed us that they fail to see how survey proceedings can prevent a Judicial Officer from accepting and acting on credible evidence as to occupation and title in regard to particular pieces of land. Our conclusion is that the stringency of the act and regulation is so great as to defeat its own object. Survey and revenue enquiries necessarily have a somewhat summary character, and Survey and Revenue Authorities are not experts in law. Officers of these departments are not in a position (and cannot hope for years to come, if ever, to be in a position) to hold enquiries to which it would be safe to give a character of finality. What we can reasonably hope for is that their enquiries will carry sufficient weight to make a presumption of truth as to title or boundaries naturally attach to their conclusions. Our revised A register, if in force, would represent (as no document at present completely represents) the public register referred to in Section 2 of Regulation XXVI of 1802 and would embody the transfers referred to in Section 3 of the same regulation, but it would be obviously unsafe to regard entries therein as conclusive proof of title.

76. *Proposed Record of Rights.*—Taking these various considerations into account, we would recommend that the village and field maps and the revised A register should constitute a Record of Rights and that an entry in the Record of Rights should be presumed to be true until the contrary is proved or until a new entry is lawfully substituted therefor (*vide* the Bombay Revenue Code of 1913, Section 135). Following the precedent of the Punjab, we have included village and field maps as part of the Record of Rights. As observed in paragraph 74 above, the A register would be useless in the absence of a map of some kind. *Both* classes of map have to be included in the Record of Rights, because the village map does not include subdivisions or a record of measurements and the field maps do not show the relative positions of the various fields which make up the village.

77. *Proposed changes in the existing law.*—The only satisfactory way of giving effect to these proposals, if found acceptable, is, in our judgment, to supersede the present Madras Survey Act and Regulation XXVI of 1802 by a single consolidated "Record of Rights" Act. The new act would, of course, have to validate proceedings taken under the existing act and regulation. Apart from the discussion contained in the last three paragraphs and in paragraph 78 below, we have commented in the course of this report on certain defects in the existing Survey Act; other defects will probably have come to the notice of Government independently. In Part VI, we indicate the points in regard to which the law may require amendment. Municipalities, Unions and rising towns should be excluded from the scope of the proposed act; otherwise it may be found, as has been found in the Punjab and Bombay, that Government is either wholly unable to survey such areas or is forced to make such a Survey part of an enquiry into a Record of Rights. The survey of urban areas which yield no land revenue is really a Municipal or Local Fund affair, though, as a matter of convenience, the actual operations have to be conducted by the Survey Department, which has a monopoly of the necessary technical skill.

78. *Service of notices in the course of a Survey.*—A point which has led to practical difficulties in the working of the present Survey Act is the necessity for serving notices in the manner prescribed in the Civil Procedure Code. As the law now stands, if a person resides in Madras, but owns lands in Tanjore or Godavari, it appears to

to be incumbent on the Survey Officer to serve a notice on him in Madras. We submit that it is not unreasonable to expect that an absentee proprietor should make arrangements to be represented in his village and that, in the event of his absence, substituted service *within the village* should meet all legitimate requirements. Minors would of course retain their right to challenge proceedings within a certain time of attaining their majority.

79. *Compulsory Revenue Registration.*—The bulk of our witnesses are in favour of making revenue registration compulsory. We would advocate this proposal, with special reference to the fact (alluded to in paragraphs 15 and 58 above) that accuracy in Survey and correct registration of title are measures called for in the direct interest of the agricultural population and only subordinately in the interests of Government revenue. The main object of these operations is to prevent litigation, disputes and oppression. The question how far the registers need improvement and can be improved has been put before various groups of ryots, to whose evidence we would invite reference: it is noticeable that, with hardly a single exception, they are disposed to make use of what has been done for them in this direction and would welcome, for a variety of reasons, the improvement in accuracy of registration which our proposals in regard to a Record of Rights are intended to secure. Officials and members of the Legislative Council have given evidence in the same sense. Practically all our witnesses are in favour of the imposition of penalties for failure to report mutations: they point out (1) that such legislation would tend to protect the poor against the rich and (2) that it would be for the most part cautionary: being intended to further schemes generally recognised as desirable, it would seldom have to be applied in practice. It is significant that one of our official witnesses, who opposed this and other reforms, ingenuously raised the objection that they might create difficulties (1) in regard to *benami* transactions, (2) in the case of Government officials who would not wish their transactions in regard to land to be generally known. Objections of this description furnish an additional argument in favour of our proposals. It may be left to the ryot to report a mutation either to the Karnam or to any Revenue Authority whom he prefers. If he trusts the Karnam, he need go no further than his own village: if he does not trust the Karnam, he can approach the Revenue Inspector or Tahsildar by post or personally, as he may prefer. If he wishes for a receipt for his application, he can obtain one, by incurring the slight additional expense involved in sending a registered letter. This choice of procedure seems to deprive our proposals of all avoidable elements of hardship.

80. *Details of proposals as to compulsion.*—The legislation required to make registration compulsory should cover transfers of proprietary right (Column 11 of the proposed A register) by means of gifts, inheritance, partition, sale, re-allotments of shares amongst co-parceners other than joint families and changes in the managing membership of joint families: it should also cover (Column 12) changes in occupancy on the part of members of joint families, the inception and termination of usufructuary mortgages, the inception and conclusion of kanom or mulgeni rights and their transfer by sale, gift, usufructuary mortgages, inheritance or otherwise. Darkhasts and relinquishments are separately provided for and need not come within the scope of the present proposals. The maximum penalty might be fixed at Rs. 25, as in Bombay, and three months' time might be allowed for reporting. It would be the person *acquiring* or *resuming* a right or status on whom the obligation to report would lie; thus, it would be the duty of a mortgagee to report the inception of a mortgage and the duty of a mortgager to report its termination. The law as to compulsion would naturally be embodied in the new "Record of Rights Act" proposed above.

Revenue Registry and the Registration Department.

81. From paragraph 63 of our report onwards, we have been occupied in discussing proposals, which, taken as a whole, amount to the introduction of a Record of Rights into this Presidency. Such is the general line of development which has been found necessary in other parts of India, and for this Presidency the choice seems to lie between a continuance of the existing state of affairs and the adoption of some such policy as that outlined above. Supplementary measures have, however, been brought to our notice, as a means of bringing the procedure

of the Registration Department and the Civil Courts into the closest possible connection with revenue procedure. Taking the registration of assurances first, we may say that, whatever the ultimate effect of our proposals may be on the registration of documents, the complete substitution of revenue registry for registration of assurances cannot be anticipated in the near future; this result has not, as a fact, ensued in any of the Provinces visited by us. We have therefore simply to see how far the Registration Department can be expected to assist the Revenue Department in securing accuracy of registration. If compulsion is introduced (as we strongly recommend), the mere fact that a transfer is effected by means of a registered document will not of course exempt the person acquiring rights thereby from the duty of reporting the fact to the Revenue Authorities, but registration of documents gives the Revenue Department an opportunity of obtaining supplementary information and of ensuring that the contents of such documents do not differ materially from facts in possession of the Revenue Authorities. One of our witnesses has pointed out that, in legal transactions, such discrepancies constitute a real danger.

82. *Means of obtaining information from the Registration Department.*—A suggestion which has received the general support of our witnesses is that all documents involving sales of land and presented for registration should be accompanied by an application for corresponding transfer of revenue registry; such an application would have to be passed on to the Tahsildar concerned and thence to the Karnam: it would thus automatically initiate mutation proceedings. A further change which would operate in the same direction would be the abrogation of the limit of one hundred rupees, below which sales accompanied by delivery of possession and orally concluded need not at present be embodied in registered documents. These changes would involve alterations in laws which are in force beyond the limits of this Presidency.

83. *Alternative suggestions discussed.*—An alternative suggestion and one which involves no change in the law is that Sub-Registrars should furnish the Revenue Department with abstracts of all transactions affecting revenue registry, which pass through their books. The Committee would, on the whole, recommend this procedure, rather than that described in the preceding paragraph. A triplicate form is used for such reports in the Punjab (Punjab Standing Order 23, paragraph 6). A duplicate form might suffice for this Presidency. This proposal has in principle received the approval of Government already (G.O. 3150, Revenue, dated 5th November 1914), but the transactions involved in the present proposal would be far more numerous than those contemplated in the Government Order. They are catalogued in paragraph 80 above. To insist on a transfer application (the alternative dealt with above) would have the advantage of placing on record the wishes of the transferer himself, but there might be practical difficulties. The adoption of either suggestion would throw some additional work on the Registration Department, but this consequence has to be faced and has not prevented other Provinces from getting such information.

84. *Benami transactions.*—Any attempt to secure correspondence between the revenue registry and the contents of registered documents would bring into immediate prominence (1) *benami* transactions, (2) fraudulent transactions, (3) *bonâ fide* transactions in which consideration has not been completely paid, (4) transactions in which the corresponding transfer of possession has not taken place. We think that condition (4) would be a reason for postponing transfer of registry, but that condition (3) would not be so. What is to be done in regard to case (2) is a matter of common sense, and no general rules can be laid down. Case (1) may very often be a variant of case (2), and it might be an advantage that it should always be so regarded. The point to be aimed at is to get the revenue registry in accordance with the facts as to possession and title, and it may not unreasonably be held that transactions which tend to defeat this object are contrary to public policy. In this connection Mr. Wood's remarks on pages 209-12 of Volume II will be found to be of interest.

85. *Means of preventing inaccuracy in Registered Documents.*—A further suggestion which has received general, though not unanimous, support from witnesses is that, in cases in which a registered document involves a transfer affecting the revenue registry and in which the land affected is neither a survey field nor a

subdivision, the registered document should be accompanied by a map drawn to scale by the Karnam; the map would be forwarded to the Revenue Authorities by the Sub-Registrar and would form the basis of a corresponding mutation and subdivision. A fee of eight annas (*vide* paragraph 50 above) could be collected by the Sub-Registrar and the whole or part of it handed over ultimately to the Karnam. The map would accompany the registered document, registration of which would be refused in its absence (a similar result would of course follow from the non-presentation of the transfer application adverted to in paragraph 82); but neither the map nor the transfer application would be a *part* of the document. The advantage of this procedure is that it would automatically ensure an exact description of the land dealt with in the document; at present the boundaries given in such documents (assuming that boundaries are given at all) are frequently vague; this is prejudicial to the interests of the parties, tends to foment or complicate litigation and is also inimical to the accuracy of the revenue registers. On the other hand, it has been pressed on our attention that insistence on the preparation and production of a map might cause delay and that delay might sometimes involve serious consequences to the party. It has also been pointed out that our proposal might place the party in the hands of an unscrupulous Karnam, who could extort heavy fees by threatening to delay the preparation of the map. The collection of a fee from the party by the Sub-Registrar and its payment to the Karnam would be a stimulus to the latter, but this circumstance is not a complete answer to the objection. On the other hand, the fact remains that this suggestion deals with a definite obstacle in the way of securing correspondence between the registered documents (and therefore, to some extent, the findings of Civil Courts), the facts and our registers. Whether this advantage outweighs the disadvantages pointed out above is a question on which the Committee as a whole is not prepared to express a definite opinion.

86. *Alternative suggestion discussed.*—If the suggestion discussed in the last paragraph is not considered feasible, it is still possible for Government to secure a definite standard of accuracy, by framing rules under section 22 (1) of the Registration Act, which provides that land should be described in such a way as to be identifiable. This provision is merely repeated in the rules framed under the act, but there seems nothing to prevent Government from insisting on the presentation of a map or accurate statement of measurements as an essential portion of the document. Such a rule would make documents more definite, but there is no way of ensuring co-ordination of any map or statement of measurements with the revenue registers, without the intervention of the Karnam or some other Revenue Official.

87. *Procedure in Registration Offices discussed.*—In this connection, we note that the Inspector-General of Registration would like his department to have copies of field maps and of all subdivisions made therein from time to time, in order to assist him in the preparation of his subsidiary index. We do not feel called upon to express any opinion on this point, but we may note that, as an alternative, he proposes to make rough sketches of subdivisions, in order to illustrate documents which come before him. Even if he were supplied with the field atlas, he would still wish to make illustrative sketches in regard to leases and other transactions which do not find a place in the revenue maps and registers. We doubt the advisability of this procedure. Sketches which are made without reference to Government maps and without local inspection can hardly correspond with the facts, except in the roughest way and, if produced in Court, might be found inconsistent with revenue records. If it is necessary for the Registration Department to have maps, they should be accurately prepared and should correspond with the revenue maps and records.

Revenue Registry and the Civil Courts.

88. *Present attitude of the Civil Courts.*—Another cause of divergence between the revenue registers and the facts is furnished by the proceedings of Civil Courts, which necessarily take place behind the back of the Revenue Department. Private suits affecting boundaries or rights to ryotwari land and therefore affecting the entries in the revenue registry constitute a substantial part of the litigation of the

Presidency. In disposing of such suits, the Judge is not bound to take cognizance of the revenue registers or to communicate his findings to the Revenue Department. It would seem from our evidence that the question how far a judge takes cognizance of revenue registers is one which the parties themselves decide as they think fit in each particular suit. If parties do not themselves file extracts from revenue records or maps, it is probable that the suit will be decided solely with reference to the evidence (oral or documentary) which they *have* produced. The findings of Civil Courts are not communicated to the Revenue Department. While revenue registers continue, from one cause or another, to be as often wrong as right (paragraph 58 above), the indifference of the Revenue Department to the proceedings of Civil Courts is intelligible, but, if a Record of Rights is introduced, the anomalous state of things described above will be found intolerable here, just as it has been found intolerable in all parts of India where a serious attempt has been made to make revenue registration correspond with the facts. So far as revenue registration and the decrees of Civil Courts deal with the same subject matter, it is essential that they should be brought into harmony, if the defects in revenue registration are to be completely removed.

89. *Execution of Civil Court Decrees.*—Various proposals have been put forward, in order to meet this difficulty. A comprehensive scheme and one which strongly commends itself to the Committee is that all decrees affecting ryotwari or inam lands should be executed by the Revenue Department. The suggestion may seem somewhat revolutionary, but the Committee has ascertained that it actually represents the practice of at least three Provinces (Bombay, the Punjab and the United Provinces). If all decrees are executed by the Revenue Department, corresponding entries of mutations in the revenue registers will be automatic and one source of confusion and inaccuracy avoided. The only difficulties of which we have heard seem to illustrate the advantages of the system. It was pointed out in Bombay that decrees were occasionally found incapable of execution, because they did not correspond with the facts on the ground and that, in such cases, they had to be returned for amendment. Supposing that a revenue subordinate in this Presidency ever had to return a decree, in order to ascertain the judge's exact wishes, he would presumably be taking a step which would be welcome to the judge himself. Ambiguity in the decree would of course be the only possible ground for such action: if the orders were clear, the only functions of the revenue subordinates would be to carry them out promptly and to embody their substance in the appropriate registers.

90. *Agency for the execution of decrees.*—It has been said by a judicial authority that, if he were involved in litigation, he would not concern himself much with the suit, as everything depends on execution. For this attitude, the present Nazarat seems to some extent responsible. Our evidence shows that the Amins, whose duty it is to execute decrees, have often gained a bad name in the matter of honesty: apart from this, they are low-paid menials, usually without adequate knowledge of Survey, and their natural tendency will, at best, be to carry out execution proceedings promptly rather than efficiently. The general trend of the evidence given before us is that the substitution of the Revenue Department for the existing service of Amins as an agency for the execution of decrees would be an improvement in itself. We recommend that no person of lower grade than a Revenue Inspector should be entrusted with the execution of such decrees. He would of course require some peons to assist him, but a corresponding reduction could probably be effected in the Civil Court's existing establishment. How a Revenue Inspector is to do this work, with due regard to his other duties, will be discussed in Part V. Statistical information could be obtained, if necessary, from the Madras High Court and perhaps from the executing agencies of other Provinces, as a preliminary to the introduction of this proposal, if found acceptable.

91. *Extract from the Record of Rights to be filed in Courts.*—The Record of Rights would be presumptive evidence of the truth of the facts contained therein (paragraph 76 above). For this and other reasons, we consider that it should be obligatory that a plaint in a suit dealing with land should be accompanied by an extract from the proposed A Register. [Bombay Land Revenue Code, edition of 1913, paragraph 135 (*h*).]

92. *Alternative proposals.*—The suggestions put forward in the last three paragraphs will, in our opinion, be sufficient to bring the revenue registers into harmony with the procedure of the Civil Courts, assuming that reports of mutations are made compulsory (paragraphs 79 and 80 above). If, however, compulsion is not resorted to, a supplemental suggestion which occurs to us as desirable is that Collectors should be supplied, once a year, with a list of all decrees affecting land which have remained unexecuted for a year or more. In this way the Revenue Department would come to know of declaratory decrees and of decrees which had been executed by consent. Information in regard to decrees of the second class is essential, and similar information as to declaratory decrees might be useful in some cases. If the Government is not prepared to accept either our proposal as to compulsion or our proposal that decrees should be executed by the Revenue Department, we would suggest, as an alternative, that a monthly abstract of all decrees affecting land should be communicated to the Collector: the result could then be embodied in the Record of Rights in the usual way.

INTRODUCTION OF A RECORD OF RIGHTS.

93. The last question which we have to discuss in this connection is the best method of starting a Record of Rights. We are of opinion that the system should be introduced in the first instance as a sequel to Settlement or as a sequel to the operations of a Special Staff in case of Re-survey: it is very important that the Special Staff should consist of the ordinary Revenue Staff of the District, who will ultimately have to work the system. It will be an important part of their duty to impress on Karnams and villagers the general principles of a Record of Rights and the part which they will play under it. The work of instruction will have to be continued long after the introduction of the system, and the Director of Land Records and his assistants will also have to take their share in this important duty. It is no doubt desirable that the system should be introduced all over the Presidency as soon as possible, but the matter of immediate importance is that it should have a fair start in one District under the most favourable conditions possible. When that has been done and the result watched and appraised, the lines of further progress can be laid down. The Honourable Mr. Curtis, on behalf of the Bombay Government, has kindly suggested that some Bombay official might help the Madras Government in the introduction of a system of Record of Rights in some District adjoining the Bombay Presidency. While grateful for this offer, we would not press for its acceptance, as our proposals, though they perhaps follow Bombay practice more than that of any other one Province, do not entirely coincide with the Bombay system. In the circumstances, it may be best for this Presidency to do what it can for itself even at the risk of possible mistakes.

PART V.—ESTABLISHMENT.

Q. 5.—Whether the retention of the Land Records Establishment is desirable or whether the work now done by it could be done by the Land Revenue Establishment with some addition to its strength.

Q. 6.—The organization and mutual relations of the Land Revenue and the Land Records Staff, if the latter is retained.

94. *Karnams.*—We are of opinion that the present period of six weeks allotted for the initial training of Karnams in Survey is not sufficiently long; three months would seem to be a proper period: the training might well include something a little more advanced than at present, say, the measuring, mapping and compilation of a *khandam*. Karnams may still be re-trained when necessary, as at present, but their second training need only last for six weeks. It is very important that the survey qualifications of Karnams should be periodically examined and further training insisted on, when found necessary. The original certificate of training is not a certificate of efficiency and should not be so regarded. When a Survey is actually in progress in a District or on the boundary of a District, we would favour the deputation of Karnams to work as Surveyors for six months, their places being taken in their villages by substitutes and they themselves being paid according to

the work which they turn out. Their minimum outturn would have to be less than that of Surveyors. The ordinary District training of Karnams will in the future have to be undertaken by selected Firka Revenue Inspectors, if the post of Land Records Inspector is abolished, as we propose below.

95. *Land Records Inspectors unnecessary.*—Land Records Inspectors were originally appointed to bring arrears in regard to demarcation and maps up to date, the intention being that, after arrears had disappeared, maintenance should be taken over by the ordinary Revenue Staff (G.O. 1212, Revenue, dated 30th November 1903, and G.O. 3290, Revenue, dated 1st December 1909). Arrears have now been cleared off in some Districts and, in some of these, ordinary maintenance has been going on for some years, the work of Land Records Inspectors being in such cases confined to the somewhat nauseous and monotonous duty of inspecting and re-planting stones. To this is added in some Districts the duty of plotting subdivisions into the field measurement book. No reason has been shown us for proposing any modification in the policy of Government in regard to Land Records Inspectors, and we would suggest that, the sooner the office is abolished, the better. The responsibility of the ordinary Revenue Establishment for maintenance has undoubtedly been obscured by its existence. Further, the position of Land Records Inspectors is somewhat anomalous, as regards their authority and (we are told) as regards their prospects. Mr. Moir points out that maintenance is a simple matter and one which the ordinary Revenue Staff are peculiarly well fitted to carry out. How immediate effect can be given to this reform depends on the state of arrears in regard to maintenance in each District. There is no difficulty in effecting the change at once in Districts where arrears do not exist or only exist in a slight degree; in other Districts, it would seem desirable that a special establishment should be appointed to clear off arrears; if this were done, the reform might be made universal and immediate. In Districts in which we have suggested Re-survey, the question how far maintenance is possible at all has been or has to be decided on the merits of each particular case; whichever way the decision goes, the existence of special Land Records Inspectors does not seem necessary in such Districts.

96. *Additions required to the cadre of Firka Revenue Inspectors.*—We are strongly of opinion that the changes proposed in the preceding paragraph cannot be brought into existence by a reduction of staff. It is generally recognised and has been repeatedly pressed on our attention that, even without the additional duties to be cast on them by the abolition of the post of Land Records Inspector, Firka Inspectors are badly over-worked. Statistics in regard to their charges are to be found in Appendix II-E. The proposals made in the course of this report, if accepted, will give them additional duties. The execution of Civil Court decrees will be a substantial item of work. The conscientious performance of the duties assigned to them in connection with mutation registers will certainly involve an increase in their work as regards transfers, especially, at first. Another most important addition to their work will be the checking of the Record of Rights, which, according to our proposals, will have to be re-written once in five years. We have proposed that some A registers in each firka should be re-written every year, definite villages being selected for each year and the registers for the whole firka re-written in a cycle of five years. A Revenue Inspector will thus have to check three or four registers every year, and the only satisfactory method of check is to read the whole register out publicly in the village. This item alone will probably mean a fortnight's additional work in the year. We would therefore recommend that the posts of Land Records Inspectors be added to the cadre of Firka Revenue Inspectors, without prejudice to the fact that their present duties and the additional duties which may be thrown upon them in connection with our report may in all cases (and certainly will in many cases) make this measure of relief wholly insufficient. We beg to emphasize the fact that the introduction of a Record of Rights is an useless waste of time and trouble, if it does not mean accurate, honest, intelligent work; but it is impossible to expect work of this quality from harassed and over-driven officials. The old-fashioned class of Revenue Inspectors had means of evading trouble and of getting surreptitious advantages from the performance or non-performance of their duties. The modern Revenue Inspector has neither the same facilities nor the same instincts. He is usually a graduate

and practically always a man of superior education, position and prospects. Any proposal which leads to his being over-worked and driven to fudging will strike at the root of all possibility of improvement in the general revenue administration of the Presidency. A firka consisting of not more than fifteen Karnams' charges in wet areas and not more than twenty charges in dry areas will give ample work to one Revenue Inspector.

97. *Deputy Surveyors not recommended.*—The Director of Survey suggests an alternative method of dealing with the maintenance of survey marks and perhaps of records also, namely, the appointment of Deputy Surveyors as a substitute for Land Records Inspectors. He suggests that these officers should form part of a Land Records Department and that they should work under the Land Records Superintendents and ultimately under the Director of Land Records. A further development of this scheme is that Assistant Karnams should be appointed to work under these officers. This last proposal doubtless gets rid of the element of dual control, which is a definite objection to the present scheme, whereby the Land Records Inspector and the Firka Inspector both control the same Village Officer; but it introduces difficulties of its own; it means increased expense and seems to make it necessary that the Karnam and Assistant Karnam should have separate sets of records. Apart from this, we venture strongly to oppose any scheme of this kind. One of the general objects aimed at by our proposals is to bind together survey operations and registration of title and to regard the maintenance of one and the other as part of the general system of revenue administration which culminates in an accurate Record of Rights (paragraph 74 above). For this we wish the Collector to have the full responsibility. Mr. Hatchell's proposal runs directly counter to our policy. Further, the general responsibility of the Collector for all branches of administration in his District is the essence of the Madras system of administration. A proposal which so completely violates this principle seems to us foredoomed to failure. An additional subsidiary objection to the proposal is that it brings into existence a low-paid and insufficiently supervised class of officers, with poor prospects and with temptations and facilities for increasing their pay by unlawful means.

98. *Training of Revenue Inspectors.*—We have received no evidence to show that, so far as training and ability is concerned, either Firka or Land Records Inspectors are generally deficient. We would only observe that Revenue Inspectors should be young and active men, with something to look forward to, not old Taluk Clerks, who will not, in the ordinary course of things, rise to any higher post. Our impression is that this is not always borne in mind. It would be well that no officer of more than thirty-three years of age should be sent for training as Revenue Inspector. It should also, we think, be in the power of the Collector to depute a Revenue Inspector for a further course of training, if actual experience of his work showed that his previous training has been forgotten or not properly assimilated. This is a less cumbrous procedure than that of reduction and would give the officer another chance, with due regard to efficiency of administration. There is sometimes inevitably an interval of two years or more between the training of a Revenue Inspector and his appointment as such and, in the interval, he may have forgotten his training partially or completely.

99. *Taluk Offices.*—We recommend that all the registers and maps comprised in and connected with the Record of Rights should be placed in charge of a responsible clerk on Rs. 45 a month. We make this recommendation as to pay, partly in the view of the necessity for emphasizing the importance of the documents constituting a Record of Rights and partly because it is essential that the clerk who is entrusted with these duties should have served as a Revenue Inspector. Our proposal will not involve any additional cost, if the clerk is appointed as a substitute for the existing Taluk Head Clerk on Rs. 35; the additional ten rupees is balanced by the saving in local allowances now given to Land Records Inspectors, whose absorption in the grade of Firka Inspector we have already recommended.

100. *Tahsildars and Deputy Tahsildars.*—There is no doubt that the process of starting a Record of Rights and getting mutations thoroughly up to date will be a laborious matter and would in ordinary circumstances necessitate the

appointment of a temporary establishment of the grade of Tahsildar or Deputy Tahsildar or both, in addition to the ordinary Revenue Staff. If, however, our suggestion to introduce a Record of Rights in connection with a Re-survey or Re-settlement be accepted, its introduction will form a part of the duty of the Special Staff or Settlement Staff, as the case may be. Whether any *permanent* increase in the cadre of Tahsildars or Deputy Tahsildars will be necessary is a matter on which we hesitate to express a decided opinion. On the one hand, it would seem that, once the registers are up to date, there may not be many more than the ordinary number of mutations to deal with; on the other hand, we have laid great stress on the extreme importance of enquiring into disputed mutations *in the village* as far as possible. This does not perhaps involve any great increase in touring (twenty days in the month is the Tahsildar's present minimum and this could hardly be raised), but it will involve more system and forethought in arranging and carrying out tours. There is not much use in Tahsildars' driving straight from their head-quarters to distant villages, scrambling through some one urgent item of work and then returning to head-quarters, though the claims of their office work may offer temptations to such a course. What is required is systematic touring from village to village, with a visit to head-quarters once in a week or so. Divisional Officers can of course check the work of Tahsildars from this point of view, when reviewing their monthly diaries. This, however, is not the only difficulty. A Tahsildar has to be constantly breaking off his tours in order to attend on the Collector or Divisional Officer or on other high officials, including officers from outside the District. This must militate against constant and systematic touring and, having regard to the value of the Tahsildar's advice and assistance in all matters of administration, it is difficult to see how such requisitions can be avoided. A further consideration is that Tahsildars may be over-worked, even as matters stand. It is not our province to enquire fully into this aspect of the matter, but our general information is that, even now, a Tahsildar's office-work and touring usually constitute more than one man's fair share of work.

101. *Probable need for increasing their number.*—Taking these circumstances into account and once more emphasizing the fact that a Record of Rights is a vain expenditure of time and trouble, unless it connotes honest, careful, intelligent work, we are inclined to think that our proposals will be found to necessitate an increase in the cadre of Tahsildars or Deputy Tahsildars or both. One witness suggested that four new charges might be required for an average District. It must however be pointed out that this suggestion was intended, not merely to provide for the working of the Record of Rights, but also to supply deficiencies in the existing arrangements for carrying out current work. That some such reform would be necessary was foreseen from the start by Government (G.O. 1212, Revenue, dated 30th November 1903). We do not think that it comes within our province to discuss in detail the method by which the charges of Tahsildars and Deputy Tahsildars could best be reduced, in case of need, but we would point out that, wherever there are Deputy Tahsildars, difficulties are likely to arise in regard to the maintenance of a Record of Rights. Deputy Tahsildars are not provided with the establishment required for keeping the record up to date, but they will have in the ordinary course of their duties to pass orders on mutations. It would be very troublesome to keep these officers supplied with extracts from the A register in regard to their Divisions, but, unless this were done, they might be hampered in the discharge of their duties. From this point of view, a District consisting of Tahsildars and Sub-Magistrates only would offer the most satisfactory condition for working the system. Our information is that, even in regard to general administration, the meagre establishment of a Deputy Tahsildar keeps his work at a lower standard of efficiency and thoroughness than that of a Taluk Office.

102. *The Land Records Tahsildar.*—We do not think that any change is called for in regard to the present position of the Land Records Tahsildar. His duties are to supervise the work of Inspectors, so far as they involve maintenance of survey marks and maps, to see that the corresponding records in Taluk Offices are properly maintained and kept up to date, to supervise the maintenance of Town Surveys, to supervise the survey training of Karnams and Revenue Inspectors,

to act as the Collector's assistant in survey matters and to supervise difficult items of survey work, which occur fairly frequently in connection with acquisitions, alterations of natural features, the existence of broken country, considerable extensions of cultivation, etc. In short, his position is, more or less, that of a District Survey Expert. The name "Land Records Tahsildar" is, we feel, inappropriate. "Land records" are documents with which he has less to do than any other member of the District Staff. The designation "Survey Tahsildar" or "District Survey Tahsildar" would emphasize his peculiar function, but might be considered objectionable, on the ground that it suggested his dissociation from ordinary revenue administration. "District Tahsildar" would seem to be a harmless, though not a distinctive, title.

103. *Land Records Deputy Collectors not recommended.*—An alternative which has been put before us is that a Deputy Collector holding the position of a Personal Assistant to the Collector should take over the Land Records Tahsildar's functions. Doubtless, such an officer might command more respect, but the work actually required for the post is of a comparatively humble and laborious kind, which it is easier to extract from an officer of the Tahsildar's grade. The alternative would also involve increased expense. The District Staff are gradually getting used to the existence of a Land Records Tahsildar, but it would take some time to harmonize the proposed Deputy Collector's functions and position with the rest of the revenue administration. Moreover, we fear that the existence of a Land Records Deputy Collector might tend to weaken the authority of Divisional Officers over their subordinates and their sense of responsibility for the maintenance of a Record of Rights, whether in regard to survey marks or registration of title.

104. *Director of Survey, Land Records and Settlement.*—We are impressed with the contrast presented by the positions of the Director of Land Records in Madras and Bombay respectively. In Bombay, he is of the status of a Commissioner and has Civilian assistants. There can be no doubt that this gives great weight to his admonitions to Collectors and to his recommendations to Government: it has also materially favoured the development of a Record of Rights. In Madras, the Director is not even of Collector's grade and has undoubtedly to work against the stream when dealing with possibly unsympathetic District Officers, who may be far senior to him and disposed to resent all but the most tactful intervention on his part. Another aspect of the matter to which we would invite attention is that, in Bombay, one officer alone intervenes between Government and the Collectorate. In Madras, recommendations in matters connected with a Record of Rights would, under present conditions, have to be dealt with by the Director of Land Records and the secretaries and members of the Board of Revenue, before reaching Government. This procedure may have advantages, but it involves delay and the adjustment of numerous differences of opinion and may lead to difficulties in laying down and adhering to lines of policy, which can only produce their effect if carried through unswervingly for many years Apart from the fact that the present Commissioner of Settlement is, not an independent officer, but a member of a more or less complex body, it is our impression that he is over-worked; he has to perform numerous duties which are not connected by any obvious administrative bond. The supervision of Survey, Land Records (including all operations, other than Survey, connected with a Record of Rights) and Settlement seems to constitute a definite coherent task and to be emphatically one man's work. We therefore recommend that such an office be created, in supersession of (1) the office of Director of Land Records, (2) the present Settlement Commissionership. The officer may be styled Director of Survey, Settlement and Land Records. Though he will not be the head of a single department, he will be responsible for a definite set of operations; he will have, it seems to us, every opportunity and inducement to keep himself in close touch, by touring and otherwise, with the subordinates over whose work he will have direct control (Survey Officers, Settlement Officers, Land Records Officers) and also with District Officials, in so far as they are carrying out operations for which he is responsible. A salary of Rs. 3,000 a month seems by no means too much for such an officer. He will correspond direct with Government; the Board of Revenue will of course be consulted when the general financial policy of Government is in question (e.g., at Settlements). It would be an advantage that he should have had previous Settlement or Land Records experience.

105. *Deputy Directors of Land Records.*—We are of opinion that the utility and influence of Land Records Superintendents might be greatly enhanced by giving them superior status. It is especially important that District Officers should have advice on which they can rely and which they would not resent in regard to the inception and maintenance of a Record of Rights. It is also essential that the proposed Director should have assistants of fairly high status. In Bombay, there are four officers of this class: two of them are Civilians and the other two are senior officers of the Deputy Collector's grade; this is what we would recommend for Madras, except that three Deputy Collectors would be necessary, instead of two. The Civilians should, we think, be fairly senior Sub-Collectors, and all five officers (Civilian and Provincial) should occupy a similar position to that of Settlement Officers and should be paid a local allowance of Rs. 150; it would be advisable that they should have served in the Settlement Department previously. If our suggestion is approved, we think that these officers should be called Deputy Directors of Land Records, rather than Superintendents. We may note that the necessity for recommending *five* officers of this grade largely arises from the fact that, as a matter of convenience, Superintendents of Land Records and Land Records Tahsildars are responsible for the maintenance of Town Surveys (*vide* G.O. 1976, Revenue, dated 8th July, 1914). There seems no reason why this work should be done gratuitously. It would probably be best that each Deputy Director should continue to inspect the urban areas in his own jurisdiction, but we think that the Municipalities and Local Funds of the Presidency should bear the cost of one of the five officers and that they should also contribute a definite part of the pay of the Land Records Tahsildar. If an additional Land Records Tahsildar is required in a District simply to supervise maintenance in urban areas, the whole of his salary should be chargeable to Municipal and Local Funds.

106. *Training of junior Civilians.*—Mr. Gibson in his evidence before us, remarked that Civilians' survey training in the Punjab came too early in their service and was not properly assimilated. We were impressed by this observation and also by the practical character of the training given to young Civilians in Bihar; a description of this will be found at the conclusion of Mr. Reid's evidence. Having regard to the importance of general co-operation on the part of all District Officers in the work of maintaining a Record of Rights, we venture to append a few suggestions as to the training of Assistant Collectors. We think that their training would be far more useful to them, if it came after two years of ordinary experience. We would also put it at not less than six months, of which four months might well be spent in a Special Staff, whose functions involved the preparation of a Record of Rights. There is no reason why this portion of their training should be simply of use to themselves; if put in a responsible, though subordinate, position in a Special Staff, it would be their duty to pass orders on the various questions which came before them; in that case, they would, while gaining valuable experience, be earning their pay as fully as if they were acting as Divisional Officers. In Bihar, Civilians actually perform definite administrative functions, whilst undergoing their training, and Mr. Reid informed us that they were very valuable assistants. The other two months of their training would be in Survey, and the whole of this period could hardly be as directly useful to the State as the portion occupied in their Special Staff work; even here, however, we do not see why, during the second month of their training, they should not be made at least to attempt work of direct utility. In the first two years of an assistant's service, it is quite possible for his Collector to give him practical experience of the Karnam's duties in regard to maintenance, and we recommend that Collectors be requested to do so. Even now, Assistant Collectors have to take charge of a village, as part of their District training. We recommend no examination whatever, at the conclusion of the six months' training, but we think that the supervising officer should report in detail on the work which the assistant has done and on the diligence and capacity which he has shown. Such a report would be of value, in deciding what officers could be best selected for the post of Assistant Settlement Officer or Deputy Director of Land Records. We are disposed to think that the present training of Assistant Collectors in groups has definite disadvantages, on which it is perhaps unnecessary for us to enlarge. It would seem desirable that each assistant should be made

to depend on himself and, as far as possible, be put in a position of personal responsibility.

107. *Training of District Munsifs.*—In the Punjab and in Bihar, it has been found practicable and useful to train District Munsifs under Survey and Settlement Officers, with a view to enabling them to dispose of their judicial work with the requisite amount of technical and local experience; the Honourable Mr. K. R. V. Krishna Rao was disposed to favour this scheme, (Volume II, pages 151, 298); we recommend its adoption. This would be one means of bringing judicial and administrative procedure into closer touch with one another; the desirability of this has been indicated in paragraph 88 above.

PART—VI. RECOMMENDATIONS.

108. We summarize our recommendations below under the heads of (A) Survey, (B) Maintenance, (C) Revenue Registration and (D) Establishments. The letter [L] is placed against suggestions, which will (or may) involve an alteration in the law.

A. *Survey.*

109. A professional Survey Department is required to carry out Survey operations in urban, ryotwari and zamindari areas (paragraphs 9—12). In urban areas, the conditions of urban administration necessitate a house-to-house Survey (paragraph 10). In ryotwari areas, the operations should include a record of measurements (paragraphs 4, 5 and 14—16), should be carried out on the Diagonal and Offset System (paragraph 17), should be undertaken as a preliminary to Re-settlement (paragraph 11), should be conducted under the guidance of a Special Staff (paragraph 43), should be judged by quality rather than outturn (paragraphs 35 and 43) and should take the form of a Re-survey (paragraph 33). We recommend the immediate application of this last recommendation to South Arcot and Madura. In zamindari areas, a simpler system will suffice (paragraph 36). Assuming that these recommendations and the other recommendations made in Part II of our report (*vide* below) are accepted and allowing for the Survey of rather more than half the zamindari areas in the Presidency in the course of the next twenty-five years, we find that there is work for five Survey Parties for twenty-five years: (paragraphs 9--11, 34--37); the sixth Survey Party should be disbanded as soon as possible (paragraph 37).

110. Subdivisions should not be demarcated, and the demarcation of survey fields should be restricted to field trijunctions [L] (paragraphs 19 and 20). Porambokes should form an exception to these rules: the extent of their demarcation depends on special circumstances (paragraphs 18 and 24). The Survey Act should lay stress on maps rather than marks as the result of a Survey [L] (paragraph 20). Special Staffs should be instructed to induce ryots to straighten their boundaries (paragraphs 21 and 22), especially in the case of long corrugated fields in the Erode Taluk and elsewhere, which will have to be re-surveyed (paragraph 56). Compulsory straightening is illegal; boundaries must be surveyed to the nearest link; the rules as to averaging contained in the Survey Manual can only be applied with the ryot's consent (paragraph 22). We have no alterations to propose in the existing rules as to clubbing, except that we see no objection to clubbing fields of different kinds (paragraph 23) and would not make the clubbing of subdivisions a part of ordinary maintenence (paragraph 53).

111. Village maps should always be printed on the 16-inch scale in future (paragraph 26). A demarcation sketch will in that case be unnecessary (paragraph 31). Blue-line prints should be prepared, when printing village maps, for use when re-editing the map (paragraph 26). Nothing but canals, roads, important cart-tracks and wells need be marked in village sites: a house-to-house Survey is unnecessary for revenue administration (paragraph 27). Tracings from the 16-inch village map will usually suffice for a record of measurement in certain Districts (paragraph 28). Where the field atlas in its present form is required, it should be prepared in manuscript (paragraph 29), a copyist-draughtsman being entertained in each Taluk Office to supply parties with copies: four annas may be charged for a copy (paragraph 30).

112. The Survey Department (reduced to five parties) can and should be placed on a permanent footing (paragraph 38), the cadre of Gazetted Officers constituted at fourteen (paragraph 41), six European Officers appointed at once (paragraph 41) and the pay of all Gazetted Officers made incremental (380 rupees, rising to 1,250 rupees in twenty years) (paragraph 38). The pay of the Director should be raised to its former scale (paragraph 39) and a Photographic Expert appointed (paragraph 42). Two Gazetted Officers should be appointed for each Party (paragraph 40), the work of the department somewhat decentralised (paragraph 43) and Survey Officers supplied with tents (paragraph 40). Gazetted Survey Officers should be trained for six months as Assistant Settlement Officers (paragraph 43). The appeal to a Survey Officer under Section 12 (1) of the Survey Act should be merged in the settlement procedure in regard to rough pattas [L] (paragraph 43). Service of notice *in a village* should suffice for the purpose of a Survey [L] (paragraph 78). A Taluk cess, leviable according to assessment, should be substituted for the present method of estimating the exact sum due from each ryot on account of survey expenses [L] (paragraph 43).

B. Maintenance.

113. If maintenance (paragraph 44) follows without delay on an accurate Survey, professional work can be reduced for the future to (1) printing new editions of maps, (2) bringing topographical details up to date, (3) Survey in connection with special operations, e.g., large irrigation projects (paragraphs 5 and 45–47). The record of measurement should be handed over to the agency responsible for maintenance, as soon as possible after Survey (paragraph 47). The Settlement or Special Staff Officer should be responsible for maintenance, until the records are handed over to the District Authorities (paragraph 47). Maintenance of survey marks should be limited to theodolite stones and field trijunctions. [L] (paragraphs 54, 55) and can, if necessary, be spread over a series of years (paragraph 49). In Ganjam and possibly in Chittoor and part of Cuddapah, maintenance should be limited to the trijunctions of grouped fields [L] (paragraph 56). A Re-survey on the Diagonal and Offset System would be preferable to maintenance of stones on all bends (paragraph 56).

114. An uniform charge should be made for subdivisions (paragraph 50). Penalties of one or two rupees should be imposed, when replacing missing stones [L] (paragraph 50). The Karnam should be paid the bulk of the amount in both cases (paragraph 50). Acquisitions should be carried out by officers with adequate knowledge of Survey (paragraph 52).

C. Revenue Registration.

115. We recommend a revised form of A register (paragraphs 63—66 and Appendix II-F) as a continuous record of title (paragraphs 57—59), of quasi-permanent occupancy (paragraphs 60, 61) and of mutations under both heads (paragraph 65), but not of tenancy (paragraph 62). It should be re-written every five years: the printed descriptive memoir (slightly expanded) will last for thirty years (paragraph 67). The revised A register, with the village and field maps, should constitute a Record of Rights and carry a presumption of truth [L] (paragraphs 74—76). An extract from the Record of Rights should be filed with every plaint in suits dealing with ryotwari or inam lands [L] (paragraph 91). It should be made compulsory to report mutations in title or quasi-permanent occupancy [L] (paragraphs 79, 80). The law on the subject should be consolidated in one Act, superseding the Survey Act and Regulation XXVI of 1802, but excluding urban areas [L] (paragraph 77). A Record of Rights should be started in connection with Settlement or Special Staff operations (paragraph 93).

116. We recommend (both in connection with the Record of Rights and as a definite improvement in itself) the adoption of a mutation register to deal with transfers in title and quasi-permanent occupancy (paragraph 68 and Appendix II-F). Mutation proceedings should be held publicly in the village (paragraph 69). Mutation orders should be subject to revision by a single authority (paragraphs 70, 71). Tahsildars, Deputy Tahsildars and Revenue Inspectors should be empowered to issue processes [L] (paragraph 72). There

should be an additional column in the chitta and patta for quasi-permanent occupants (paragraph 73), who should be made legally liable to pay revenue [L] (paragraph 63).

117. The Registration Department should send the Tahsildar extracts from all registered documents affecting title or quasi-permanent occupancy (paragraph 83). Other suggestions for ensuring correspondence between the registration and revenue records are discussed in paragraphs 81—87. Settlement Officers should supply the Registration Department with information as to areas, etc. (paragraph 67). Decrees of Civil Courts affecting land should be executed by the Revenue Department [L] (paragraphs 88—90). Alternatives are discussed in paragraph 92. District Munsifs should be trained in Survey and Settlement (paragraph 107).

D. Establishment.

118. Karnams should undergo a three months' course of training in Survey and, if necessary, a further course of six weeks. Advantage should be taken of survey operations in the neighbourhood to give them six months' work as Surveyors (paragraph 94). Firka Revenue Inspectors should not be more than thirty-three years old, when trained: their training should be repeated, if necessary (paragraph 98). The training of junior Civilians in Survey and Special Staff work should come after two years' service and should last six months (paragraph 106).

119. Land Records Inspectors should be at once absorbed in the cadre of Firka Revenue Inspectors (paragraphs 95-97). A firka should not comprise more than fifteen Karnams' charges in wet areas or more than twenty in dry areas (paragraph 96). The Record of Rights and mutation register should be in charge of a Taluk Clerk on forty-five rupees a month (paragraphs 68 and 99). The cadre of Deputy Tahsildars and Tahsildars will probably require an increase, in order to provide for systematic touring and to enable them to perform their current work efficiently. It would be an advantage, if this grade could be confined to Tahsildars and Sub-Magistrates (paragraphs 100, 101). We have no changes to suggest in regard to Land Records Tahsildars, except that their designation seems inappropriate (paragraphs 102, 103).

120. We recommend that the Settlement Member of the Board of Revenue and the Director of Land Records be replaced by a Director of Survey, Settlement and Land Records on three thousand rupees a month, working directly under Government (paragraph 104). The present Superintendents of Land Records should be replaced by officers of the status of Settlement Officers, drawing a special allowance of one hundred and fifty rupees a month. Two of them should be senior Sub-Collectors; the other three should be senior Deputy Collectors. They should be called Deputy Directors of Land Records. Local Funds and Municipalities should pay for one of the Deputy Directors and should contribute towards the pay of Land Records Tahsildars (paragraph 105).

121. *Conclusion.*—In conclusion, we wish to place on record our acknowledgments of the cheerful and efficient assistance rendered by our establishment. Our tours inevitably involved some expense and discomfort, as far as they were concerned.

J. P. BEDFORD (*President.*)
R. HUMPHREYS.
W. A. HASTED.
G. A. D. STUART (*Secretary*).

APPENDIX I-A.

TOUR STATEMENT.

1st to 5th December 1914	Madras.
6th to 10th ,, ...	Tinnevelly.
11th ,, ...	Erode, Coimbatore District.
12th to 15th ,, ...	Calicut, Malabar District.
16th and 17th ,, ...	Cannanore, Malabar District.
18th to 20th ,, ...	Mangalore, South Canara District.
4th to 6th January 1915	Bellary.
8th to 10th ,, ...	Poona.
11th and 12th ,, ...	Bombay.
14th to 21st ,, ...	Lahore.
22nd to 26th ,, ...	Allahabad.
28th to 31st ,, ...	Gaya.
1st and 2nd February 1915	Calcutta.
3rd to 8th ,, ...	Chatrapur, Ganjam District.
9th ,, ...	Gudivada, Kistna District.
10th ,, ...	Madras.

APPENDIX I-B.

LIST OF WITNESSES.

Serial number.	Camp.	Name of witnesses.	Designation.
1	Madras	G. Haller, Esq.	Director of Land Records, Coorg.
2	Tinnevelly ...	C. G. Todhunter, Esq., I.C.S.	Collector of Tinnevelly.
3	Do. ...	D. R. Matheson, Esq., I.C.S.	Head-quarters Sub-Collector, Tinnevelly (late Assistant Settlement Officer).
4	Do. ...	M.R.Ry. D. Arulanandam Pillai Avargal ...	Land Acquisition Deputy Collector.
5	Do. ...	„ S. Tirumalai Ayyangar Avargal.	Personal Assistant to the Collector of Tinnevelly.
6	Do. ...	„ S. Jambunadha Ayyar Avargal ...	Huzur Sarishtadar, Tinnevelly.
7	Do. ...	„ P. Appa Rao Pantulu Garu ...	Land Records Superintendent, Group IV.
8	Do. ...	„ P. Ramachandra Ayyar Avargal.	Land Records Tahsildar, Tinnevelly.
9	Do. ...	„ M. Taj-ud-din Sahib Bahadur ...	Deputy Collector, Koilpatti (late Land Records Tahsildar).
10	Calicut	C. A. Innes, Esq., I.C.S.	Collector of Malabar (late Settlement Officer).
11	Do.	M.R.Ry. Rao Bahadur G. T. Verghese ...	Retired Deputy Collector and formerly Special Deputy Collector for the registration of Jenmam titles.
12	Mangalore ...	M. E. Couchman, Esq., I.C.S.	Collector of South Canara (late Settlement Officer).
13	Do. ...	M.R.Ry. C. Gopalan Nayar Avargal ...	Head-quarters Deputy Collector, South Canara.
14	Do. ...	„ M. Anantha Nayar Avargal ...	Tahsildar of Mangalore.
15	Do. ...	„ H. Sankara Rao Avargal	Land Records Tahsildar, South Canara.
16	Bellary	A. F. G. Moscardi, Esq., I.C.S.	Collector of Bellary.
17	Do.	M.R.Ry. T. P. Krishnaswami Sastri Avargal.	Land Records Superintendent, Group II.
18	Do.	„ I. Ekambara Ayyar Avargal ...	Tahsildar of Bellary.
19	Do.	„ T. S. Krishnaswami Nayudu Garu.	Land Records Tahsildar, Bellary.
20	Do.	„ K. V. Subba Rao Garu	Tahsildar of Kudligi (late Land Records Tahsildar, Bellary).
21	Chatrapur ...	N. Macmichæl, Esq., I.C.S.	Collector of Ganjam.
22	Do. ...	R. W. Davies, Esq., I.C.S.	Revenue Divisional Officer, Berhampur (formerly Director of Land Records).
23	Do. ...	A. G. Leach, Esq., I.C.S.	Special Settlement Officer, Berhampur.
24	Do. ...	M.R.Ry. A. Jagaraya Pillai Avargal ...	Land Records Superintendent, Group I.
25	Madras	D. T. Chadwick, Esq., I.C.S.	Director of Agriculture (formerly Settlement Officer).
26	Do.	T. E. Moir, Esq., I.C.S.	Officer on special duty (formerly Settlement Officer).
27	Do.	D. G. Hatchell, Esq.	Director of Survey.
28	Do.	M.R.Ry. V. Mahadeva Ayyar Avargal ...	Officer in charge of the Madras Town Surveys, formerly Land Records Superintendent.
29	Do.	„ A. R. Vaidyanadha Ayyar Avargal.	First Assistant, Board of Revenue, Settlement Department (formerly Land Records Superintendent).
30	Do.	„ D. Sesha Acharlu Avargal ...	Assistant Director of Survey (Second Assistant, Central Survey Office).
31	Do.	The Honourable Mr. C. R. M. Schmidt ...	Inspector-General of Registration.
32	Do.	N. E. Marjoribanks, Esq., I.C.S.	Collector of Guntur (formerly Director of Land Records).
33	Do.	The Honourable Mr. K. R. V. Krishna Rao.	Zamindar of Polavaram and Additional Member of the Legislative Council.
34	Do.	„ Mr. B. Narasimheswara Sarma.	High Court Vakil and Additional Member of the Legislative Council.
35	Do.	„ Mr. V. K. Ramanuja Achariyar.	Late Secretary to the Board of Revenue, Settlement Department, and Additional Member of the Legislative Council.
36	Do.	M.R.Ry. J. Venkatanarayana Nayudu Garu.	Assistant Settlement Officer in charge of the preparation of a Record of Rights in South Vallur Estate, Kistna District.
37	Tinnevelly... ..	Oral statement taken from selected ryots of the Tinnevelly District.	
38	Erode	Oral statement taken from selected ryots of Sirkar Chinna Agraharam (Vaiyampalaiyam), Erode Taluk, Coimbatore District.	
39	Calicut	Oral statement taken from selected ryots of Cheviyur Village, Calicut Taluk, Malabar District.	
40	Cannanore ...	Oral statement taken from selected ryots of Chirakkal, Prematti, Cannanore, Karra Valiyur and Manderi Villages, Chirakkal Taluk, Malabar District.	

Serial number.	Camp.	Names of witnesses.	Designation.
41	Mangalore ...	Oral statement taken from four ryots near Mangalore, South Canara District.	
42	Do.	Oral statement taken from five other South Canara ryots.	
43	Bellary	Oral statement taken from five ryots of Bellary Taluk, Bellary District.	
44	Chatrapur... ...	M.R.Ry. T. Venkatakrishnayya Garu, B.A., B.L.	Vice-President of the Ganjam District Board.
45	Do.	Oral statement of fifteen ryots of villages adjoining Chatrapur, Ganjām.	
		Not orally examined.	
46	......	P.S.P. Rice, Esq., I.C.S.	Collector of Chingleput.
47	......	A. T. Forbes, Esq., I.C.S.	Do. Anjengo.
48	...	M. Young, Esq., I.C.S.	Do. the Nilgiris.
49	......	S. W. G. I. MacIver, Esq., I.C.S.	Do. Anantapur.
50	......	A. R. Knapp, Esq., I.C.S.	Do. Madura.
51	......	Diwan Bahadur R. Ramachandra Rao, Esq.	Do. Nellore.
52	......	R. B. Wood, Esq., I.C.S.	Do. Tanjore.
53	......	E. B. Elwin, Esq., I.C.S.	Do. Godavari.
54	......	L. Vibert, Esq., I.C.S.	Do. Trichinopoly.
55	......	J. M. Turing, Esq., I.C.S.	Do. Kistna.
56	......	J. R. Huggins, Esq., I.C.S	Do. Ramnad (late Director of Land Records).
57	......	F. A. Coleridge, Esq., I.C.S....	Additional Sessions Judge, Coimbatore.
58	......	E. H. Wallace, Esq., I C.S.	District and Sessions Judge, Tanjore.
59	......	J. T. Gillespie, Esq., I.C.S.	Do. Salem.
60	......	J. W. Hughes, Esq., I.C.S.	Do. Nellore.
61	......	H. O. D. Harding, Esq., I.C.S.	Do. Trichinopoly.
62	......	J. G. Burn, Esq., I.C.S.	Do. Madura.
63	......	H. R. Pate, Esq., I.C.S.	Revenue Divisional Officer, Tuticorin (late Settlement Officer).
64	......	J. K. Lancashire, Esq., I.C.S.	Revenue Divisional Officer, Hospet (late Settlement Officer).
65	......	G. T. Boag, Esq., I.C.S.	Special Settlement Officer, Madura.
66	......	M.R.Ry. R. Narayanavaradha Nayudu Garu.	Tahsildar of Srivaikuntam.
67	......	" C. Chandrasekhara Ayyar Avargal.	Do. Tiruchendur.
68	......	" T. S. Ramaswami Ayyar Avargal.	Do. Nanguneri.
69	......	" T. S. Subrahmanya Ayyar Avargal.	Land Records Tahsildar, Malabar.
70	......	" :. Seshayya Avargal	Special Deputy Tahsildar, Tinnevelly.
71	......	Raja Jaya Vira Rama Venkateswara Ettappa Nayakar.	Zamindar of Ettiyapuram.
72	......	M.R.Ry. Chengalvaraya Ayyar Avargal ...	Diwan of Sivagiri.
73	......	" Sadhu Ganapathy Pantulu Garu...	Vakil, Tinnevelly.
74	......	" M. Ganapathia Pillai Avargal ...	Honorary Deputy Collector, Tinnevelly.
75	......	" M. Arumugam Pillai Avargal ...	Retired Deputy Collector.

APPENDIX I-C.

QUESTIONS CIRCULATED BY THE COMMITTEE.

Section I.

1. Is the work of Revision and Resurvey to be carried out hereafter by the Survey Department necessary?

2. Are all the following maps and registers necessary?

Village Maps.
Field Maps, both Village and Taluk sets.
Demarcation Sketches.
Stone Registers.

Can any of these be made more efficient? Can any alterations be effected in any of them with a view to economy? Is a record of measurement necessary? If so, to what standard of accuracy should it attain?

3. A simplified system of Field Survey is being tried in the Punganur Zamindari. Under this system, only one diagonal is measured across each field, all bends on the boundary of the field being offsetted on this diagonal. It is proposed to maintain only the stones at the ends of these main diagonals, in addition to the Village and khandam boundary theodolite stones. Do you consider that this system could be used in ryotwari tracts in future? If so, do you recommend that, in addition, (*a*) all field trijunctions, (*b*) all field bends should also be demarcated in the first instance? If so demarcated, should the stones be maintained?

4. In the case of a Survey on the modern Diagonal and Offset System, is it sufficient to maintain only the field trijunction stones and theodolite stations?

5. Are the disadvantages of the Block Map System of Survey, i.e.:—

(1) the absence of an independently plottable field map,
(2) the difficulty of relaying long block lines, in order to replace stones,
(3) the inaccuracies and defects in the existing block maps,

sufficiently great to justify the Resurvey of all such areas?

6. Would the saving in maintenance of stones resulting from the use of the Diagonal and Offset or Punganur Systems be sufficient to justify the Resurvey of Districts surveyed on the Triangles System?

7. If only a limited number of stones are to be maintained, should they be set in masonry bases?

8. To what extent (if at all) could the size of Survey Fields be increased, so as to promote economy in demarcation, without loss of utility? Should a distinction be made between wet and dry fields in this connection? Would the economy thus gained in Maintenance justify the expense of a Resurvey?

9. To what extent can economy be effected in surveying and mapping the boundary of a Survey Field, without loss of efficiency? Are bends in the boundaries of fields being mapped with an unnecessary degree of minuteness?

10. Is the registration of all Subdivisions, however small, an essential part of the ryotwari system? Can you suggest any practical way of curtailing trouble and expense under this head? To what extent would the same arguments apply to the plotting, mapping and demarcation of such Subdivisions?

11. Are there any cases in which it would be safe to leave porambokes unmapped or undemarcated? Can the Village Officers or the more wealthy and influential ryots of a Village be trusted to protect communal interests (e.g., grazing grounds) or public interests (e.g., river courses) against encroachments? Should the rule that Subdivisions need not be demarcated apply to Subdivisions which form porambokes?

12. At present, field maps and the measurements shown therein enable Village Officers to show a ryot the boundaries of his field and to demarcate and register Subdivisions. Are these objects worth the expense of Survey and Maintenance? If so, can you suggest any more economical method of Survey by which the same objects could be attained?

13. Would it be possible to curtail the time spent by Survey Officers in hearing objections and the amount of travelling involved? Are the arrangements under this head the most systematic ones of which the circumstances admit?

14. Can speed and economy in survey be increased by any change in the number and qualifications of the existing Establishments of Survey Field Parties or in the character and amount of supervision?

15. At present, the cost of Survey and Maintenance is distributed as follows between individual landholders and the general tax-payer :—

(1) *During Survey.*—The cost of demarcation stones and cooly labour is paid by the landholders whose fields are surveyed. The cost of measurement, mapping and general supervision is borne by the general tax-payer.

(2) *During Maintenance.*—The cost of renewing missing stones, including the cooly labour involved, is borne by individual landholders. In addition, some of the cost of the Maintenance Staff is borne by landholders, under the head of fees payable for the "time and labour of the Land Records Staff." The remainder of the cost of the Supervising Staff, as also the full cost of measuring and mapping new Subdivisions and revising patta registration, is borne by the general tax-payer.

Do you consider this a fair arrangement? If not, what apportionment of cost would you suggest between :—

(1) The individual landholder.
(2) The Village as a whole.
(3) The general tax-payer.

16. During the course of Maintenance, many flagrant instances have been noticed in which boundary marks have been wilfully removed by ryots, to the detriment of communal interests. Do you consider that these cases can be adequately dealt with under the existing law? If not, what remedy would you suggest? Do you consider that the power of inflicting fines summarily in such cases should be given to any particular class or classes of Land Records Officers? If so, under what safeguards?

17. Do you consider that it is necessary to map all the topographical details shown on pages 202—205 of the Board's Standing Orders, Volume II? What limits, if any, should there be to the mapping of Field Channels?

SECTION II.

1. To what extent can the Maintenance of land records and maps by the Revenue Staff (including the Land Records Establishment) be simplified and rendered more efficient?

2. Is Maintenance, as carried out under the existing rules, a complete substitute for periodical Revision Surveys or can it be made so? Would you prefer a system of strict Maintenance or a system of periodical and thorough overhauling by the Survey Department (Revision Survey)?

3. Do you consider (*a*) the Maintenance of Survey Marks, (*b*) the marking of new Subdivisions should be done by Firka Revenue Inspectors or by Special Officers, such as Land Records Inspectors, it being understood that the charges of Firka Revenue Inspectors would be proportionately reduced, if their work were increased?

4. Would you allow Karnams to club Subdivisions? If so, would it be safe to allow them, as part of the process, to erase the Subdivisions in the registers? Can this difficulty be got over? Should the Land Records Inspector check clubbings in the same way in which he checks Subdivisions?

5. Do you consider that the present rules and practice regarding the Survey and Acquisition of lands under Act I of 1894 can be improved, in the interests of efficiency, convenience and economy of Maintenance or otherwise?

SECTION III.

1. Are any steps practicable and desirable, in order to make the Land Revenue Registry a more accurate representation of facts?

2. Do the deficiencies in the present system result in serious administrative drawbacks? Do they impede the collection of revenue?

3. Do the deficiencies result in any injustice to the ryot? Do they form the subject of complaint?

4 Would the ryot welcome a system of compulsory registration of transfers of land? Would the imposition of penalties for failure to register be effective? Would it be practicable? Would it arouse resentment?

5. Should Officers of the Registration Department be made to insist on the production of (1) a patta in the name of the applicant, (2) a certified map of the land, as a preliminary to registration of deeds affecting land?

6. Should a certified map of the land accompany the delivery of possession in pursuance of a Civil Court Decree?

7. Should Officers of the Registration Department supply the Revenue Department with abstracts of all registration transactions affecting land?

8. Should Decrees of Civil Courts which involve alterations of Survey Boundaries be executed by the Land Records Staff, instead of by the Court Amin, as at present?

9. Would registration be stimulated by making an entry in a patta *presumptive* evidence of title? (Section 4, Clause 2, of the Evidence Act.) Would the existence of such a rule substantially strengthen the position of a pattadar in suits affecting title?

10. Would it be feasible to make an entry in a patta *conclusive* proof of title? (Section 4, Clause 3, of the Evidence Act). What preliminaries would you suggest, in order to prevent such a rule from causing injustice and disappointment to individuals?

Section IV.

1. Can you suggest any method of improving the present system of granting pattas ?

2. Even if registration were perfected, a patta would not always be a complete statement of the liabilities of an individual. This is due to the fact that the same individual may possess :—

(a) lands in several Villages,

(b) shares in several joint pattas,

(c) Inam lands, enfranchised or unenfranchised, the dues on which are not shown in his patta.

Is it feasible to give each individual a patta, containing a complete statement of his dues to Government ?

Sections V and VI.

1. Can the Maintenance of Land Records be best performed (1) by the Establishment, as now constituted, (2) by members of the Land Revenue Establishment working under the Collector (Assistant Superintendents of Land Records having the position of Special Deputy Collectors), (3) by a separate Department working under the Director of Land Records (Deputy Surveyors taking the place of Land Records Inspectors and perhaps Special Assistant Karnams being appointed exclusively for land records work), (4) as part of the work of the Survey Department (Surveyors, Deputy Surveyors, Assistant Surveyors, etc., performing the duties of the present Establishment).

2. Does Maintenance suffer technically through being performed by an agency other than the Survey Department ?

3. Is it advantageous that the Maintenance Staff should be under the Collector ?

4. Do the present arrangements cause unnecessary friction ? How would this aspect of the question be affected by the adoption of any of the alternatives suggested above ?

5. How should the Maintenance Staff be recruited and trained ?

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APPENDIX II-A.

MEMORANDUM ON THE MADRAS SURVEY DEPARTMENT.

I agree in the main with the opinions expressed by my *locum tenens*, Mr. W. A. Hasted, in his "Memorandum on the Madras Survey Department." The points on which I differ from him or which I am desirous of amplifying are as follows :—

I. Recruitment.—I would confine recruitment of the European cadre to graduates of the English, Scotch or Irish Universities who have taken an honors degree in Mathematics. It is from this class that the Forest Department and to a certain extent the superior Revenue Establishment of Indian State Railways and, if I am not mistaken, the Egyptian Survey Department are now recuited, and I believe the supply is greatly in excess of the demand. The choice of candidates I would leave to a Selection Committee appointed by the Secretary of State in Council. The standard of physical fitness should be as high as that of the Forest Department. I would confine recruitment of the appointments reserved for Indians to Upper Subordinates (Sub-Assistants) of the department. There is no gainsaying the fact that an out-of-door life is not congenial to the *average* Indian graduate, and that the Indian is sooner rendered unfit for hard work in the field than the European through his aging more rapidly. The Indian is in his element in an office and generally renders excellent service. A degree in Engineering would be wasted on a Survey Officer and no degree is any criterion of an Indian's value as a Survey Officer. This can be gauged only by his conduct of his duties in the Upper Subordinate grades of the department.

II. Training and probation.—I am in full agreement with Mr. Hasted in considering that the present system of training is faulty. Ten months' training in Survey is insufficient to make the average Probationer an efficient Assistant to the Officer in charge of a Survey Party, but owing to the exigencies of the service he has more than once been required to *hold charge* of a Survey Party! If in future, recruitment for the European cadre is confined to graduates, I would require the selected candidates to undergo a course of Survey at the Ordnance Survey Office, Southampton. I doubt they would be able to satisfy the Surveyor-General of the Ordnance Survey as to their general knowledge of Survey in less than a year. As a rule, it takes a student at the Royal Geographical Society's head quarters longer than this to obtain the Society's diploma, but few of them, I believe have had the advantage of a 'Varsity education.'

III. Conditions of Service.—There is no exaggeration whatever in Mr. Hasted's description of the very bad conditions now prevailing in the department. They could hardly be worse! The impossibility of the task imposed on Survey Officers is not only destructive of their peace of mind, but of economy also. This I have repeatedly urged since I took charge of my office 13 years ago, but to no effect. It is generally recognized that to get the best out of the low paid Indian employee, Civil or Military, adequate European supervision is a *sine qua non*. There is a greater efficiency, greater desire to please, and a general spirit of *esprit-de-corps* amongst the rank and file when they know their European Officers and realize that they are known to them. In the Survey Department, as at present constituted, it is impossible for the European Officer in charge of a Survey Party, comprising 200 to 300 low paid subordinates in office and field, unaided by an Assistant, to know his men as he should and to exercise the supervision they require. He has in consequence to leave much undone that should, be done and to rely on the reports of his upper subordinates, some of whom are not free from bias, and create disaffection. The system of Survey adopted in this Presidency and necessitated by its Revenue Administration is much more complicated than that of any other province. A high standard of accuracy is insisted upon, but at the same time exception is taken to the cost of the survey. This is dependent to some extent on the individual efforts of the surveyors. While idlers and inaccurate workers are put under stoppages of pay, the progress of the survey is delayed and its rateable cost increased as the supervisory charges are irreducible. The only way in my opinion to effect these desiderata is to give the officer in charge of each Party an Assistant.

IV. Conditions of Salary.—The conditions of salary ruling in the department are clearly indicated in the accompanying tabulated statement in which the rate of promotion at present obtaining in the Survey and 3 other departments is compared. The 6 Survey Officers, whose service in each grade is averaged are, excepting myself, all that remain of those who joined the department prior to the changes effected in the cadre in 1891 and 1905. I have excluded myself, as my fortune has been so good that it would be destructive of the presenation of the real prevailing conditions under which the other 6 officers are labouring to include in the averages the figures that pertain to me. It has not been possible to calculate what additional amounts officers have received on account of acting or sub *pro tem.* promotions, but this I believe will not affect to any appreciable extent the *relative differences* in the average salary of an officer of each of the four services. The figures from which were calculated the average service of a Survey and a Police Officer on promotion to each grade, as also of officers of the other 2 services in the grades on Rs. 1,500 and upwards were obtained from the Madras Quarterly Civil List corrected up to 1st October 1913 and from the classified list of the State Railway Establishment corrected up to 31st December 1912. It will be seen that though Police officers have fared badly as compared with the officers of the Forest, and Traffic Department of State Railways, the lot of the Survey officers has been infinitely worse, *e.g.*, one of the 6 officers with upwards of 21 years' service is still on Rs. 550 only, 2 with upwards

of 26 and 20 years' service on Rs. 750 and 2 with upwards of 29 and 28 years' service on Rs. 900 and one only with close on 30 years' service on Rs. 1,100. In the event of his seniors remaining in service until they reach the age of 55 years, Mr. Lushington cannot get Rs. 900 until 17th November 1917 the date on which Mr. MacHutchin must retire, and even then he will not be able as he will reach the age of 55 on 14th July 1920, to put in 5 years' service in that grade to entitle him to full pension in spite of the 33 years' service--all but 3 weeks—which he will then have to his credit. It is clear therefore that the graded system of pay has worked much hardship in the Survey Department. If any further evidence of this is required, it is to be found in the last column of the statement which shows that the average annual emolument of a Survey Officer during the first 20 years of his service were £325 per annum as against an average of £589 in the other 3 services or 45 per cent. less. Further calculations on the same basis show that the average emoluments in 20 years of the same 6 Survey Officers was less by Rs. 35,417 or £2,361 than that received by all the 9 retired, or deceased, Civilian Officers who served in the Department since its creation in 1858, with the exception of the late Mr. G. P. Greene who is excluded for the reason that he, like me, was exceptionally fortunate in rising to the head of the Department some years before he had completed 20 years' service. The necessity and equity of an incremental system of pay has been recognized by the Secretary of State and adopted in all the uncovenanted services except the Survey and the Police, which the tabulation statement clearly shows are in urgent need of it too.

The incremental scale of pay recommended by Mr. Hasted is much the same as that adopted for the Forest and Public Works Departments and is calculated to give the Survey Officer a salary of Rs. 1,250 per mensem when he reaches his 20th year of service. Thereafter his chance of further promotion is less than that of the Forest or Public Works Department Officer, who have 5 and 9 appointments rising to Rs. 1,900 and 2,750 respectively to look forward to, as against his one appointment on Rs. 1,800, since reduced to Rs. 1,400 for future incumbents. This reduction of salary is quite unjustifiable as the difference of Rs. 300 between the pay of the Deputy Director, 1st class, and the future *maximum* pay of the Director is not only not commensurate with the heavier work and responsibilities of the latter officer but does not cover the additional cost of residence at the Presidency town. Nothing less favourable than the incremental scale recommended by Mr. Hasted can in justice be granted to the 6 Survey Officers whose lot as compared with that of their contemporaries in the Police who were recruited in the same way and from the same class, or with that of officers of the other 2 services or even with past officers of their own service, has been so hard. It is the only fair scale for European Officers for whom conditions of life in India are gradually getting harder, and I feel sure it will attract men of the best 'Varsity education. It is possible that in their ignorance of conditions of life in India, they would accept a lower scale of salary, but it would be impolitic to offer it, as in the course of time it would be the cause of complaint or dissatisfaction. The scale of pay recommended by Mr. Hasted for Indian Officers is slightly higher than that now obtaining in the Public Works and Forest Departments. Though I see no reason why it should be so, I am quite averse to any less favourable scale than that now obtaining or that may hereafter be adopted in the other 2 services. Though the liability of the European and Indian Survey Officer to injury to his health through frequent attacks of malaria may be less than that of his *confrere* in the Forest Department, he has to undergo just as much exposure to the elements and must necessarily have more office work owing to the much larger establishment he has to control and to the closer scrutiny of details which his work demands. I would however strongly recommend a higher rate of increment, *i.e.*, Rs. 80 as a special concession to Mr. T. A. Sundaram Ayyar in consideration of the fact that he has been acting in the gazetted grades almost continuously since 1904 and could not be confirmed for want of a permanent vacancy until 20th October 1911, when he had reached the 48th year of his age. He has rendered exceptionally good service and it would be distinctly hard that he should suffer a large reduction in his pension as he will do, if not given the higher incremental rate of Rs. 80 from the date of his confirmation until the 30th November 1918 when he will reach the age of 55. I quite agree with Mr. Hasted that the Land Records Superintendents should not be included in the Survey cadre. Those of them who are Ex-Tahsildars and have undergone only 6 months' training in Survey are quite unfit to hold the appointment of an Officer in the Survey Department.

V. Conditions of leave.—I am in full agreement with all that Mr. Hasted has said on this subject. Sanction to accumulate privilege leave up to 6 months and to commute furlough into privilege leave in the ratio of 2 : 1 up to a maximum absence at one time of nine months on full pay would be a great boon to many a married European Officer who is debarred from taking furlough, of which he may be in urgent need, owing to his inability to maintain himself and his family in Europe on half pay. It would also be very beneficial to all grades of Indian employees who are generally precluded from taking long leave, of which they are in need, for the same reason.

VI. Conditions of pension.—Under Chapter XIX, article 474, Civil Service Regulations, Survey Officer cannot obtain any pension at all until he has completed 30 years' service whereas Officers of the Public Works, Forest and Telegraph are, eligible not only for a proportionate pension of £350 after 20 years' service but to full pension of £437–10 after 25 years. It is generally understood that the Commission which in 19th February 1903 enquired into the conditions of service in the Police were strongly of opinion that 30 years' service was much too long and even went to the extent of recommending compulsory retirement of the whole Force-officers and men—after 25 years' service.

There is no need to make retirement compulsory after 25 years' service in the Survey, but it should certainly be optional as in the Public Works Department and Forest services. Few will avail themselves of the concession but the feeling that they are *not* tied down to 30 years of service in India will give to their outlooks towards the future a more roseate hue. It is better for the service that the few who elect to retire on completion of 25 years' service should not be compulsorily detained for a further 5 years as they are likely to feel they are working more for their pension than for Government. The invalid pension after 20 years' service should certainly be increased from one-third

to one-half of the average emoluments of the last 3 years of service rendered. I altogether disagree with Mr. Hasted that the maximum pension for Europeans and Indians should be £500 and Rs. 5,000. It should be £600 and Rs. 6,000 in consideration of the fact that the scale of pension was fixed as long ago as 1855 when £500 was the equivalent of Rs. 5,000 The present pension of £437-10 at the rate of 1*s*. 9*d*. per rupee is therefore £62-10-0 less than it was 59 years ago! In consideration of the totally different conditions of service and the high cost of living now prevailing, the equity of an addition to the pension of £100 in Europe or Rs. 1,000 in India cannot be disputed. The appointment of Director of Survey is not one of those enumerated in Article 475 of Chapter XIX of the Civil Service Regulations and it certainly should be added. The distinction made thereby between the Director of Survey and a Deputy Inspector-General of Police and Conservator of Forests is invidious. In any case, my salary for the past 8 years has been more than that of five of the 8 officers of the Police and Forests now eligible for the additional pension of Rs. 1,000 a year. As pointed out *supra* under "*conditions of salary*" the reduction of the pay of the Director of Survey from Rs. 1,500-1,800 to Rs. 1,200-1,400 was quite uncalled for, as there has been no diminution in his duties and responsibilities, but rather an undoubted increase which is bound to continue.

Though I failed to touch on Mr. Hasted's remark in paragraph IV *supra re* the relative expenses of European and Indian Officers, and since I have recommended a maximum pension of Rs. 6,000 for the Indian Officer which the existing code method of calculating pensions on the basis of the salary drawn during the last 3 years of service will not allow of if the highest salary allowed to the Indian is fixed at Rs. 900, I must explain the discrepant figures. There is no doubt that the increase in the expenses of the Indian Survey Officer, through the rise in the cost of house rent and food stuffs, etc., is, as in the case of the European Officer, out of all proportion to any increase of salary he has received in the past. The Indian, though his standard of living is less expensive than that of the European, is burdened with many social and family liabilities, *e.g.*, the marriage of all his daughters and the provision of a dowry for each of them and the housing and feeding of sometimes a host of needy distant relatives, who from the European point of view have really no claim on him. In course of time the Indian no doubt will shake himself free of these encumbrances and should then be much better off on Rs. 900 per mensem than the European on Rs. 1,250. He cannot legitimately claim the same pay, at any rate, if recruited in India, as every man who leaves his native land for foreign parts expects to be well remunerated for so doing. I am of opinion that a maximum pension of Rs. 500 per mensem is none too high, though about Rs. 84 more than he is entitled to according to the present code rules for an Indian who has served for three years in the highest grade on Rs. 900 per mensem.

VII. *Limitation in the employment of non-Europeans.*—The ideal Survey Officer is one who is more in his element out-of-doors than at his office table. For this reason and because the average Indian ages more rapidly, I agree with Mr. Hasted that the number of Indian officers should be limited to one-third and I would employ the majority of them in office.

I quite agree with Mr. Hasted's remarks in paragraph VIII and consider the reasonableness of his claim in paragraph IX indisputable.

D. G. HATCHELL,
Direcor of Survey, Madras.

24th January 1914.

Average service of an officer on promotion to each grade.

Department.	Rs. 300	Rs. 400	Rs. 425	Rs. 450	Rs. 500	Rs. 550	Rs. 700	Rs. 750	Rs. 800	Rs. 900	Rs. 1,000	Rs. 1,100	Rs. 1,200	Rs. 1,250	Rs 1,500	Rs. 1,700	Rs. 1,800	Rs. 1,900	Rs. 2,000	Approximate average emoluments received by an officer during the first twenty years of his service calculated on substantive pay, and not excluding periods spent on furlough and medical leave.
	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	
POLICE. ... ... (67 Officers)	...	1·8 (14 officers)	...	...	4·7 (14 officers)	...	8·3 (9 officers)	...	10·8 (7 officers)	15·7 (11 officers)	20·9 (5 officers)	...	24·5 (2 officers)	...	21·6 (3 officers)	...	28·8 (2 officers)	...	...	Rs. 1,56,492 or £522 per annum.
SURVEY ... ... (6 Officers)	4 (5 officers) D	...	6·75 (6 officers)	...	...	15 (6 officers)	...	18·5 (5 officers) A	...	21·5 (2 officers) B	...	22·6 (1 officer) C	...	...	...	...	...	...	...	Rs. 97,492 or £825 per annum.
FORESTS E ... (31 Officers)	...	1·5	2·1	...	3	5·3	8·4	9·4	10·4	12·4	14·4	16·4	18·4	19	23 approximate. (1 officer)	26·2 (2 officers)	...	29·3 (1 officer)	...	Rs. 1,94,640 or £ 649 per annum.
TRAFFIC DEPT. STATE RY. F. (80 Officers) excluding 10 administrative officers on 1,250 to 2,000 Rs. and about a dozen Probationers on 200 to 300 Rs.	...	2	...	4	...	6	8	...	10	12	14	16	...	...	26·1 (3 officers)	...	...	...	28·1 (2 officers)	Rs. 1,78,800 or £ 596 per annum.

N. B.—Those officers of the Police, Forests, and Traffic Departments who have risen from the ranks and whose service is therefore abnormal are excluded.

A Mr. Bateman whose service to date is 21 years 2 months and 11 days is still on Rs. 550.

B Messrs. Lushington and Gompertz whose services to date are 26 years 5 months and 23 days and 20 years 9 months and 20 days respectively are still on Rs. 750.

C Messrs. Hasted and Mullins with services to date of 29 years 2 months and 7 days and 28 years 2 months and 16 days respectively are still on Rs. 900.

D Mr. MacHutchin excluded, as the grade on Rs. 300 was created after he was promoted to Rs. 425.

E Promotions from 380 Rs. to 1,250 Rs. automatically by increments of 40 or 50 Rs. annually; thereafter by vacancies and selections. The averages therefore are not actuals, but approximate and are shown for comparative purposes only.

F Two classes (comprising 8 grades from 400 to 1,100 Rs.) of District Officers and one class (3 grades from 1,250 to 2,000 Rs.) of administrative Officers. Promotions from class to class is by vacancy and selection, but from grade to grade automatically every two years. Royal Engineer Officers are excluded.

APPENDIX II-B.

EXTRACT from Demi-official letter No. 182, dated 15th February 1915, from Colonel T. F. B. Renny-Tailyour, C.S.I., R.E., Superintendent, Southern Circle, Survey of India.

* * * * *

2. From my experience up to date I consider that the material supplied to the Survey of India by the Madras Survey department is in most places very reliable and it is also very useful for it enables us to undertake, in the plains of Madras, supplementary survey instead of original survey. I consider that the gain to the Survey of India, on account of increased outturn is greater than the amount we have to pay to the Madras Survey department for their material and, as our surveyors get accustomed to supplementary survey, this gain should increase.

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APPENDIX II-C.

STATEMENT showing average size of a survey field and the intensity of demarcation in the several districts of the Madras Presidency.

Name of districts.	Area of assessed land.			Number of survey fields.	Number of survey marks.	Number of survey marks per acre.	Number of survey marks per field.	Average size of a survey field.	Percentage of wet to total area.
	Wet.	Dry.	Total.						
	ACRES.	ACRES.	ACRES.					ACRES.	
Anantapur	121,760	2,231,536	2,353,296	391,234	1,421,760	·60	3·6	6·0	5·1
Arcot, North ...	260,185	961,814	1,221,999	422,982	1,975,313	1·6	4·7	2·9	21·0
Arcot, South ...	341,814	1,266,560	1,608,374	726,159	2,921,672	1·8	4·0	2·2	21·0
Bellary	48,213	2,216,722	2,264,935	306,374	1,067,711	·47	3·5	7·3	2·1
Canara, South ...	422,680	1,810,331	2,233,011	97,560	1,019,121	·46	10·4	22·8	18·0
Chittoor	82,847	525,374	608,221	318,063	1,754,772	2·9	5·5	1·9	13·6
Coimbatore ...	78,873	2,585,953	2,664,826	438,026	1,654,452	·62	3·8	6·1	3·0
Cuddapah	70,049	1,228,015	1,298,064	473,791	1,854,845	1·4	4·0	2·8	5·4
Ganjām	205,786	238,562	444,348	346,426	1,705,360	3·9	5·0	1·3	46
Gōdāvari	174,248	312,360	486,608	140,720	566,566	1·2	4·1	3·5	35
Guntūr	266,711	2,123,369	2,390,080	486,985	1,244,736	·52	2·5	4·9	11
Kistna	368,371	790,852	1,159,223	251,301	897,988	·77	3·6	4·6	32
Kurnool	54,274	2,606,152	2,660,426	436,919	1,606,089	·61	3·7	6·0	2·0
Madura	176,131	1,061,302	1,237,433	442,048	1,780,333	1·44	4·1	2·8	14·5
Malabar	553,507	2,107,103	2,660,610	293,031	2,019,630	·76	7·0	9·2	21
Nellore	228,163	1,246,929	1,475,092	328,633	1,091,834	·74	3·3	4·5	15
Nilgiris, The ...	...	216,956	216,956	19,055	140,429	·64	7·4	11·4	...
Rāmnād	26,754	292,017	318,771	126,302	418,504	1·3	3·3	2·5	8·4
Salem	87,369	1,367,849	1,455,218	450,510	1,411,048	·97	3·1	3.2	6·0
Tanjore	778,885	414,142	1,193,027	385,345	2,361,472	2·0	6·1	3·1	66
Tinnevelly ...	181,156	1,081,696	1,262,852	365,533	1,214,935	·96	3·3	3·4	14
Vizagapatam ...	58,228	111,495	169,723	65,672	354,419	2·1	5·4	2·6	34
Trichinopoly ...	168,986	1,594,917	1,763,903	333,678	1.454,903	·82	4·4	5·3	9·7
Chingleput ...	352,021	408,496	760,517	415,522	1,771,315	2·3	4·3	1·8	46
Total ...	5,107,011	28,800,502	33,907,513	8,061,869	33,699,217	1·0	4·2	4·2	15·1

APPENDIX II-D.

STATEMENT showing the history of survey and maintenance in the several districts of the Madras Presidency.

Name of districts.	Taluks.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Ganjām	Berhampore ... ... Chatrapur ... ... Chicacole ... ... Aska ... ... Goomsur	Triangles.	1872—1880	1908—1910	1913—1915	1,272	To be maintained.
Vizagapatam ...	Palakonda ... ... Golkonda ... ... Eleven villages of Sarvasiddhi.	Triangles.	1886—1888	...	1910	421	To be maintained. To be resettled without resurvey.
	Sixty-four villages of Sarvasiddhi.	Diagonal and ffset.	1888	1911	1915	127	Resurveyed owing to loss of records.
Gōdāvari ..	Rajahmundry ... Peddapur	Diagonal and off-set.	1862	1896	1914—1915	727	To be maintained (subject to further scrutiny).
	Polavaram ... ... Yellavaram ... Chodavaram ...		1883 and 1896.	...	...		
	Razole ... ... Amalapuram ... Ramachandrapur ... Cocanada	Block map.	1861—1862	1894	Cannot be maintained.	819	To be resurveyed owing to inaccuracies in resurvey records (G.O. No. 1420, Revenue, dated 15th May 1914).
Kistna	Ellore ... ... Nandigama ... Yernagudem ...	Diagonal and off-set.	1863—1866	1896—1898	1913-1914	1,135	To be maintained (subject to further scrutiny).
	Tanuku ... ... Narasapur ... ... Bhimavaram ... Bezwada ... ... Gudivada ... ... Kaikalur ... ... Bandar ... ... Divi	Block map.	1862—1865	1893—1894	Cannot be maintained.	1,889	To be resurveyed owing to inaccuracies in survey records (G.O. No. 2592, Revenue, dated 7th September 1914).
Guntūr	Tenali ... ... Repalle	Diagonal and off-set.	1867	1896	Maintenance will commence on completion of resurvey.	314	Under resurvey owing to inaccuracy of resurvey records.
	Bapatla	Block map.	1867	1896		673	To be resurveyed owing to inaccuracies in resurvey records (G.O. No. 1491, Revenue, dated 23rd May 1914.
	Guntūr ... ... Sattenapalle ... Vinukonda... ... Palnad ... ... Narasaraopet ... Ongole	Diagonal and off-set.	1867	1898—1906	1913-1914	4,010	To be maintained (field maps not yet printed).
Anantapur ...	Penukonda ... Tadpatri ... ... Gooty ... ... Kadiri	Triangles.	1880—1886	... 1913	1913 1915	3,258	To be maintained.
	Kalyandrug ... Dharmavaram ... Hindupur ... ... Madakasira ... Anantapur ...	Block map (some plane table).	1886—1894	...	Cannot be maintained.	3,207	Wet lands to be resurveyed and dry lands to be revised (G.O. No. 3226, Revenue, dated 7th November 1913 and G.O. No. 3294, Revenue, dated 16th November 1914).
Bellary	Adoni ... ... Alur ... ... Siruguppa ... ... Bellary ... ... Hospet ... .. Kudligi	Triangles.	1879—1889	...	1913	3,726	To be maintained (to be resettled without resurvey).

Name of districts.	Taluks.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Bellary—*cont.* ...	Hadagalli ... ... Harpanahalli ... Rayadrug	Plane table.	1889-1891	...	1914	1,781	To be maintained (to be resettled without resurvey).
Kurnool	Cumbum ... ... Markapur	Triangles.	1875	1908	1910	2,059	To be maintained.
	Remaining seven Taluks.	Diagonal and offset.	1866-1874	1900—1907		5,329	
Cuddapah ...	All taluks	Triangles ...	1873-1876	1906-1911	1913-1914	5,531	To be maintained.
Chittoor	Do.	Do. ...	1879-1882	1912-1915	Now commencing.	2,931	Do.
Nellore	Do.	Diagonal and offset.	1867-1873	1902-1905	1911-1912	3,946	Do.
Chingleput ...	Do.	Triangles ...	1869-1873	1908-1910	1914	2,124	Do.
South Arcot ...	Cuddalore	Do. ...	1883	...	Not yet commenced.	417	Under revision survey.
	Remaining seven taluks.	Do. ...	1880-1887	...	No maintenance going on.	3,461	To be revision surveyed (G.O. No. 2130, Revenue, dated 16th July 1912).
North Arcot ...	Tiruvannamalai ...	Triangles ...	1882	...	1915	989	To be maintained.
	Tirupattur	Diagonal and offset.	1868	1907	1910	367	Do.
	Remaining taluks...	Triangles ...	1875 to 1878	1912-1914	Now commencing.	2,789	Revision survey just completed. To be maintained.
Salem	Salem ... ... Omalur ... ... Tiruchengode ... Attur ... ... Uttankarai	Diagonal and offset.	1865-1867	1896	Maintenance not possible.	2,818	To be re-surveyed owing to inaccuracies in resurvey records (G.O. No. 3519, Revenue, dated 1st December 1913).
	Hosur ... ... Krishnagiri ... Dharmapuri ...	Do.	1865-1868	1906-1907	1910	1,987	To be maintained.
Tanjore	Mayavaram ...	Plane table.	1888	...	Not yet commenced.	283	Under resurvey owing to loss of records.
	Mannargudi ...	Do.	1888	...	...	289	To be resurveyed owing to loss of records.
	Negapatam ... Nannilam ... ... Tirutturaippundi ... Pattukkottai ... Arantangi ... ... Tanjore (Half) ...	Do.	1889-1890	...	1913, but maintenance not satisfactory.	1,807	To be resurveyed (G.O. No. 2339, Revenue, dated 3rd August 1912).
	Shiyali ... ... Kumbakōnam ... Papanasam ... Tanjore (Half) ...	Triangles.	1888-1890	...	1913-1914	768	Proposed for revision survey.
Trichinopoly ...	Karur ...	Do.	1875	...	1914	560	To be maintained.
	Namakkal	Diagonal and offset.	1863-1865	1896	...	798	Under resurvey (G.O. No. 3519, Revenue dated 1st Dec. 1913).
	Trichinopoly ...			1894-1914	...		Resurveyed in 1914.
	Kulittalai ... ... Musiri ... ... Perambalur ... Udaiyarpalayam ...	Block map.	1863-1864	1894-1895	Maintenance not possible.	2,369	To be resurveyed owing to inaccurate resurvey (G.O. No. 3136, Revenue, dated 2nd Nov. 1914).
Madura	Palni ... ... Periyakulam ...	Triangles.	1880	...	No maintenance going on.	1,140	Under revision survey.
	Remaining five taluks.		1880-1885	...		2,002	To be revision surveyed. Part to be resurveyed owing to new irrigation.
Tinnevelly ...	All taluks	Diagonal and offset.	1870-1874	1907-1911	1912-1915	2,489	To be maintained.
Malabar ...	All taluks except Wynaad.	Block map and Plane Table.	1889-1896	...	Regular maintenance not possible.	4,034	To be resurveyed (G.O. No. 2129, Revenue, dated 16th July 1912).
	Wynaad	Angular ...	1899	...	1914	821	Proposed for revision survey.
Coimbatore ...	Coimbatore ... Palladam ... ... Avanashi ... ... Pollachi (portion)...	Diagonal and offset.	1873-1877	1910	1912-1915	1,614	To be maintained.

Name of districts.	Taluks.	System of existing survey.	Date of original survey.	Date of resurvey or revision survey.	Date of commencement of maintenance on modern lines.	Total surveyed area in square miles.	Remarks.
Coimbatore—*cont.*	Gobichettipalayam.						
	Erode						
	Bhavani						
	Dharapuram ...	Triangles.	1873–1880	...	1912–15	5454	To be maintained.
	Pollachi						
	Udumalpet ...						
	Kollegal						
South Canara ...	Kasargod						
	Karkal						
	Mangalore						
	Uppinangadi ...	Block map and Plane Table.	1893–1896	...	1911–12	4,018	Probably needing resurvey.
	Udipi						
	Coondapur						
Rāmnād	All taluks	Diagonal and Offset.	1872–1882	1911–1912	Maintenance not yet commenced.	596	To be maintained.
The Nilgiris ...	Coonoor						
	Ootacamund .	Angular ...	1883	*1909–1914		729	Do.
	Gudalur	Do. ...	1883	...	1914	280	To be revision surveyed.
Anjengo	......	Block map.	1891	...	1910	1	To be maintained.
	Total area ...	...	...	...	...	88,461	...

* Revision survey carried out by a special staff.

ABSTRACT.

	SQ. MILES.
I. Area to be maintained (including areas now actually under resurvey or revision survey)—	
(*a*) Diagonal and offset areas	23,408
(*b*) Triangles areas	32,671
(*c*) Block map areas	1,782
(*d*) Areas surveyed by angular instruments	729
Total ...	58,590
II. Area ordered to be resurveyed or revision surveyed (for Government Orders see body of statement)	25,853
III. Area probably needing resurvey (South Canara)	4,018
Grand total ...	88,461

APPENDIX II-E.

STATEMENT showing nature of Karnam's and Revenue Inspector's charges in each district of the Madras Presidency.

Name of the district.	Total area of assessed land in the district.	Total assessment of the district.	Total number of karnams in the district.	Average area of a karnam's charge (assessed land only.)	Average assessment of a karnam's charge.	Average number of survey marks per karnam.	Average pay of a karnam per month.	Number of Firka Revenue Inspector's charges.	Average number of karnams for each Revenue Inspector's charge.
1	2	3	4	5	6	7	8	9	10
	ACRES.	RS.		ACRES.	RS.		RS.		
Ganjām	444,348	13,02,666	383	1,160	3,401	4,453	7· 9	16	24
Vizagapatam	169,723	6,84,594	180	943	3,803	1,969	8· 0	11	16
Gōdāvari	486,608	36,11,377	545	893	6,626	1,080	9· 5	32	17
Kistna	1,159,223	62,15,689	765	1,515	8,125	1,174	9· 0	42	19
Guntūr	2,390,080	55,28,785	1,009	2,369	5,479	1,234	9· 4	33	31
Nellore	1,475,092	25,22,992	567	2,602	4,450	1,926	8· 9	28	20
Cuddapah	1,298,064	15,32,256	516	2,516	2,969	3,594	8· 3	30	17
Anantapur	2,353,296	14,48,741	580	4,057	2,498	2,451	8· 0	30	19
Bellary	2,264,935	18,78,800	569	3,981	3,302	1,877	8· 4	29	20
Kurnool	2,660,426	19,42,695	702	3,790	2,767	2,288	8· 1	31	23
Chingleput	760,517	20,75,932	695	1,094	2,987	2,549	8· 2	22	32
Chittoor	608,221	7,99,117	330	1,843	2,422	5,317	8· 3	19	17
North Arcot	1,321,999	26,49,975	978	1,250	2,709	2,020	8· 1	35	28
South Arcot	1,608,374	41,71,642	1,323	1,216	3,153	2,209	8· 2	38	35
Tanjore	1,193,027	60,02,595	1,402	851	4,281	1,706	9· 3	38	37
Trichinopoly	1,763,903	28,10,088	766	2,303	3,669	1,899	8· 9	31	25
Madura	1,237,433	25,38,197	546	2,266	4,649	3,261	8· 6	34	16
Rāmnād	318,771	6,02,950	115	2,772	5,243	3,639	8· 7	9	13
Tinnevelly	1,262,852	26,33,443	493	2,967	5,342	2,464	9 2	28	18
Coimbatore	2,664,826	31,43,063	778	3,425	4,040	2,127	8· 6	35	22
Nilgiris	216,956	1,33,945	28	7,748	4,784	4,658	13· 5	6	5
Salem	1,455,218	19,72,445	775	1,877	2,545	1,834	7· 5	31	25
South Canara	2,233,011	22,84,246	357	6,255	6,399	2,855	10· 6	18	20
Malabar	2,660,610	34,98,497	796	3,343	4,395	2,537	9. 3	38	22
Total ...	33,907,513	619,84,730	15,198	2,231	4,078	2,211	8· 7	664	23

APPENDIX II-F.

Record of Rights—Proposed A Register.

Survey number.	Subdivision number.	Old survey number and sub-division number.	Govern-ment or inam.	Dry, wet or poram-boke.	Source of irrigation.	Single or double crop.	Rate per acre.	Extent.	Assess-ment.	Name and des-cription of proprietor; *vide* note (1) below.	Name and description of occupant, with status; *vide* notes (1) and (2) below.	Substance of order of change with authority (reference to mutation register or entry in village account 3).	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Notes.—(1) *Columns* 11 *and* 12—Name, father's name, caste and residence should always be given. In the case of Hindu joint families only the name and description of the managing member should be given. In other cases where there are more than one person concerned the name and description of each person and the amount of his share should be given.

(2) *Column* 12.—The term "occupant" includes not only a proprietor in actual occupation of his land but also certain other persons in lawful possession, e.g., kanomdar, mulgenidar, mortgagee in possession, member of a joint family or coparcenary in separate possession. In each case the status should be given, e.g., "Ramaswami, usufructuary mortgagee."

Serial number

Foil.

REGISTER of Changes (Mutation Register).

Old entry.						New entry.					
Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.	Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.
1	2	3	4	5	6	7	8	9	10	11	12

Summary of order.

Serial number.

Counterfoil.

REGISTER of changes (Mutation Register).

Old entry.						New entry.					
Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with stauts.	Survey number.	Subdivision number.	Extent.	Assessment.	Name and description of proprietor.	Name and description of occupant with status.
1	2	3	4	5	6	7	8	9	10	11	12

Karnam's report of the facts with signature of the parties if present and attestation of Headman.

Abstract of Revenue Inspector's enquiry with attestation of village officers and signed statement of parties, if present.

Similar record of Collector's, Divisional Officer's, Tahsildar's and Deputy Tahsildar's enquiry, if any.

Order of Revenue Inspector (undisputed cases) or order of the Collector, Divisional Officer, Tahsildar or Deputy Tahsildar (disputed cases).